

## Hospital pharmacists' awareness, knowledge, perception and use of government policy and guidelines on pain management in Nigeria

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### ABSTRACT

**Background:** Pain is a major problem accompanying many diseases and could have a profound impact on quality of life. The Federal Government of Nigeria developed pain management guidelines in 2018 to provide informed guidance to healthcare practitioners in line with global best practices. However, awareness, knowledge and perception of these guidelines among pharmacists have not been adequately explored.

**Objective:** To evaluate hospital pharmacists' awareness, knowledge, perception and use of government policy and guidelines on pain management.

**Method:** This study employed Focus Group Discussion (FGD) to collect information from hospital pharmacists conveniently selected from six tertiary hospitals across four geopolitical zones in Nigeria. Data were analysed using descriptive statistics and thematic analysis.

**Results:** A total of 39-pharmacists participated in the FGDs, with females constituted the majority (26;66.7%). All (39; 100.0%) were aware of the pain management guidelines and reported to have undergone training on pain management. All the participants (39; 100.0%) knew the drugs highlighted in the guidelines, as well as the WHO pain management ladder. They also perceived an improvement in the management of pain in their respective hospitals post-training by the Federal Ministry of Health (FMOH). Non-availability or erratic supply of the needed narcotics was cited by all the participants as a major hindrance to effective pain management.

**Conclusion:** The participants were aware of the guidelines for pain management and showed adequate understanding of the guidelines and the WHO-analgesic ladder. They however cited erratic supply of needed narcotics as the topmost barrier to effective pain management in their practice settings. Thus, a need for appropriate mechanisms of funding and procurement to ensure sustained availability of the commonly prescribed narcotic medicines.

**Keywords:** Pain management, Hospital pharmacists, Opioids, Tertiary hospitals, Guidelines

## Sensibilisation, connaissances, perception des pharmaciens hospitaliers et utilisation des politiques et directives gouvernementales sur la gestion de la douleur au Nigéria

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### RESUME

**Contexte :** La douleur est un problème majeur qui accompagne de nombreuses maladies et pourrait avoir un impact profond sur la qualité de vie. Le gouvernement fédéral du Nigéria a élaboré des lignes directrices sur la gestion de la douleur en 2018 afin de fournir des conseils éclairés aux professionnels de la santé conformément aux meilleures pratiques mondiales. Cependant, la connaissance, la connaissance et la perception de ces lignes directrices chez les pharmaciens n'ont pas été suffisamment explorées.

**Objectif :** Évaluer la sensibilisation, les connaissances, la perception et l'utilisation des politiques et directives gouvernementales sur la prise en charge de la douleur par les pharmaciens hospitaliers.

**Méthode :** Cette étude a utilisé la méthode de groupe de discussion (FGD) pour recueillir des informations auprès de pharmaciens hospitaliers choisis de manière pratique dans six hôpitaux tertiaires répartis dans quatre zones géopolitiques du Nigéria. Les données ont été analysées à l'aide de statistique descriptive et d'analyse thématique.

**Résultats :** Au total, 39 pharmaciens ont participé aux discussions de groupe, les femmes constituant la majorité (26 ; 66,7%). Tous (39 ; 100,0%) étaient au courant des lignes directrices sur la prise en charge de la douleur et auraient suivi une formation sur la prise en charge de la douleur. Tous les participants (39 ; 100,0%) connaissaient les médicaments mis en relief dans les directives, ainsi que l'échelle de prise en charge de la douleur de l'OMS. Ils ont également perçu une amélioration de la prise en charge de la douleur dans leurs hôpitaux respectifs après la formation par le ministère fédéral de la Santé (FMOH). La non-disponibilité ou l'approvisionnement irrégulier des narcotiques nécessaires a été cité par tous les participants comme un obstacle majeur à une gestion efficace de la douleur.

**Conclusion :** Les participants étaient au courant des lignes directrices pour la gestion de la douleur et ont montré une compréhension adéquate des lignes directrices et de l'échelle analgésique de l'OMS. Ils ont cependant cité l'approvisionnement irrégulier des stupéfiants nécessaires comme le principal obstacle à une gestion efficace de la douleur dans leur milieu de pratique. Il est donc nécessaire de mettre en place de mécanismes appropriés de financement et approvisionnement pour assurer une disponibilité durable des médicaments narcotiques couramment prescrits.

**Mots-clés :** prise en charge de la douleur, pharmaciens hospitaliers, opioïdes, hôpitaux tertiaires, directives

## INTRODUCTION

Access to pain relief is an essential part of perioperative and palliative care.<sup>1,2</sup> Progress in acute pain management over the last 40 years has demonstrated that effective pain relief can be achieved with a range of inexpensive drugs and treatments, yet the vast majority of patients in less developed countries have little or no access to therapies that could effectively alleviate pain, especially chronic pain.<sup>3,4</sup> Pain and its management constitute a significant burden for healthcare providers, as well as patients with life-limiting illness in both developed and developing countries including Nigeria.<sup>2,3</sup> For instance, more than 80% of cancer patients present with severe pain in the late stages of the disease, while more than 70% of other terminally ill patients reported moderate-to-severe pain.<sup>5,6,7</sup> In addition, the community prevalence of persistent pain varies from 11.% to 55.2% and is grossly undertreated.<sup>2,8,9</sup> Several reports on postoperative pain have demonstrated infrequent assessment, poor diagnosis and inadequate treatment among patients.<sup>1,10,11</sup> Barriers to optimize treatment of chronic pain can be divided into provider-related barrier<sup>12</sup>, system-related barrier<sup>13</sup>, and patient-related barrier.<sup>14,15</sup> Physicians remain unwilling to give opiates for pain because of fear of abuse and addiction, as well as the concern about opioid-induced side effects.<sup>12,13,16</sup> This coupled with insufficient knowledge and education on pain management<sup>17-20</sup>, as well as restricted access to narcotic drugs in many countries.<sup>12,15,18,21,33</sup>

In 2012, the Global Access to Pain Relief Initiative (GAPRI) reported that only 0.1% of patients with HIV/AIDS and cancer that required narcotic medicines to manage moderate and severe pain in Nigeria could access these medicines.<sup>4</sup> The 2013 Joint Assessment by the Federal Ministry of Health (FMOH), National Agency for Food Administration and Control (NAFDAC) and WHO to determine the barriers militating against access to narcotics and other controlled medicines, identified that the extant laws and policies focused more on law enforcement with little or no attention given to access to narcotics for medical purposes.<sup>4,23</sup> One of the barriers to increased access for appropriate medical use of opioids is the fear of non-medical use and addiction to opioids and opioids-induced side-effects among both healthcare providers and regulators, as well as among patients and their families<sup>12,14,15,24</sup>, this has led to insufficient medical use of opioids. In addition, efforts to prevent non-medical use of internationally controlled substances, such as morphine and other opioid analgesics have focused on preventing diversion and abuse rather than ensuring access by people with legitimate health needs.<sup>24,25</sup> There

are increasing calls to strengthen control measures to prevent diversion and substance abuse without corresponding emphasis on interventions that relieve pain and suffering resulted in underestimation of the narcotic needs for medical use.<sup>24,25</sup> In order to address this disparity in access to opioids and ensure guaranteed access to opioid analgesics, the United Nations General Assembly Special Session on the World Drug Problem in 2016, reiterated the need to address existing barriers especially those related to legislation, regulatory systems, healthcare systems, affordability, the training of healthcare professionals, education and awareness-raising.<sup>26</sup> Among the factors responsible for poor management of pain is inadequate knowledge and training of healthcare professionals including pharmacists in comprehensive pain management.<sup>12,17-22</sup> Treatment plans are usually not protocol-based, while physicians' prescriptions on pain management are largely driven by practice experience, as well as availability irrespective of patients' need.<sup>23,27,28</sup>

The introduction of the National Policy for Controlled Medicines and its Implementation Strategies<sup>23</sup> was to ensure improved availability and accessibility to controlled medicines, including local manufacturing of schedule I narcotics and decentralization of its warehousing. The Guidelines for the Management of Pain in Nigeria (2018) was to provide informed guidance to healthcare practitioners and care-givers in the management of pain in all categories of patients requiring pain relief.<sup>26,29</sup> The goal of these guidelines is to provide informed guidance to healthcare practitioners as they manage pain in patients.<sup>26,29</sup> The guideline contained information on methods and practical steps of assessment, diagnosis and treatment of pain both pharmacologically and non-pharmacologically, as well as effective monitoring.<sup>26</sup> The guideline is expected to lead to a standardized treatment protocol for pain management in adults and children in Nigeria, that would ensure the highest standard of quality care in line with global best practices. Effective treatment of pain involves a multidisciplinary approach and presence of pharmacists on a pain management team has been associated with better pain symptom control.<sup>30,31</sup> However, in Nigeria, literature is scanty on pharmacists' awareness and knowledge of pain management protocol and guidelines. Thus, this qualitative study aimed to explore hospital pharmacists' awareness, knowledge, perception and use of government policy and guidelines on pain management, while opinion on this policy direction on the availability and rationale use of opioid medications was also captured.

## METHOD

### Study design

The study was carried out, using focus group discussion (FGD) among hospital pharmacists conveniently selected from six tertiary hospitals in four geopolitical zones in Nigeria.

### Study site

Six tertiary hospitals namely University College Hospital Ibadan (South-West), Lagos University Teaching Hospital (South-West), Ahmadu Bello University Teaching Hospital Zaria (North-West), Aminu Kano Teaching Hospital Kano (North-West), Jos University Teaching Hospital (North-Central), University of Uyo Teaching Hospital, Uyo (South-South).

### Study population

Pharmacists with > 3 years practice experience in tertiary hospitals were enrolled as participants for the study.

### Inclusion/exclusion criteria

Informed consent was obtained from eligible pharmacists, who must have > 3 years' experience in hospital practice (i.e. senior pharmacists upward). The eligibility criteria were irrespective of the current practicing unit of participants.

### Sample size and sampling technique

Convenience sampling technique was employed for selection of eligible and consented participants for the FGDs. One session of FGD was conducted for a group of between six and eight participants who were gathered within a zone or of close proximity. Five FGDs were conducted within the study period to capture selected participants. Though, the list of registered hospital pharmacists in the senior pharmacists' cadre and above in each hospital was sought from the Heads of Department of the respective hospitals, but the number of participants selected from each zone varied depending on accessibility and convenience of the participants. Thus, no precise sample size was determined.

### Data collection and recruitment procedure

Participants for the study were met on institution by institution basis. Verbal informed consent was obtained from individual participant that signify intention to be part of the study. They were informed that participation is entirely voluntary, while confidentiality and anonymity of response were assured. The data collected from participants was mainly through FGDs with focus on

awareness and knowledge of government policy and guidelines on pain management; knowledge of WHO-pain management ladder; as well as availability, access and types of pain medicines in their respective facility among others. Demographic characteristics were also captured, while information from the FGDs was recorded verbatim, and subsequently decoded and transcribed appropriately. The FGD questions were grouped into themes in line with the objectives of the study.

### Question-guide/themes for the FGDs

- Awareness of government policy and national guidelines on pain management
- Knowledge and perception of the national guidelines on pain management and pain management ladder
- Availability, access and types of pain medicines in their respective facility
- Perception of the influence of government policy on pain management in their practice setting
- Disposal mechanism for expired medicines and perception on the effectiveness of the pain management guidelines in Nigeria healthcare system

### Data analysis

Quantitative data were summarised using descriptive statistics including frequency and percentage, while thematic analysis was used for qualitative data from the FGDs.

### Ethical consideration

Ethical approval for the study was obtained from the University of Ibadan/University College Hospital Institutional Review Board (UI/UCH IRB) with approval number NHREC/05/01/2008a

## RESULTS

### Demographic characteristics of the participants

Details of the demographic of participants are presented in Table 1. Majority (26; 66.7%) were females. All (39; 100%) had additional postgraduate qualifications including Master of Pharmacy and/or Master of Science (23; 59.0%), Fellowship of the West African Postgraduate College of Pharmacists (16; 41.0%). Most participants were in the cadres of chief pharmacist and assistant director (13; 33.3%) each.

**Table 1: Demographics of participants**

Variable		Frequency (%)
<b>Sex</b>	Male	13 (33.3)
	Female	26 (66.7)
<b>Highest Qualification</b>	M.Pharm./M.Sc.	23 (59.0)
	FPCPharm	16 (41.0)
<b>Rank/cadre</b>	Senior Pharmacist	3 (7.8)
	Principal Pharmacist	5 (12.8)
	Chief Pharmacist	13 (33.3)
	Assistant Director	13 (33.3)
	Deputy Director	5 (12.8)
<b>Facility</b>	University College Hospital	8 (20.5)
	Ahmadu Bello University Teaching Hospital	7 (17.9)
	Amino Kano Teaching Hospital	7 (17.9)
	Lagos University Teaching Hospital	6 (15.4)
	Jos University Teaching Hospital	6 (15.4)
	University of Uyo Teaching Hospital	5 (12.8)

FPCPharm = Fellow of Postgraduate College of Pharmacists

### Participants' response from FGDs

#### ***Awareness of government policy and guidelines on pain management***

All the participants (39; 100.0%) were aware of the guidelines and have undergone training on pain management anchored by either the Federal Ministry of Health (FMOH) or the step-down training by department of anesthesia of the respective institution. They mentioned that the training was designed to sensitize healthcare professionals of the availability of the national pain management policy and guidelines for rational prescription and dispensing of pain medications based on the WHO pain ladder for effective pain treatment. None of the health facilities where participants were drawn from had a hard copy of the "Guidelines on Pain Management in Nigeria", but reported that they had seen the electronic version of the policy document during the training.

#### ***Knowledge and perception of the national guidelines on pain management, as well as availability, access and types of pain medicines in the respective facility***

All the participants (39; 100.0%) knew the drugs highlighted in the policy guideline for pain management, and were able to give highlights of the 4-step ladder approach to pain management. All (39; 100.0%) participants were able to highlight the procedure and approval process established by NAFDAC and FMOH for the procurement of narcotics. Participants mentioned that narcotics are obtained from the Federal Medical Store (FMS), Oshodi, Lagos, following the established procedures. The list of narcotics normally obtained from the FMS as mentioned by participants is shown in Table 2.

**Table 2: Narcotics normally obtained from the Federal Medical Store Oshodi by the facilities**

<b>Narcotics</b>	
Pethidine Injection	
Pethidine Tablet 50mg	
Fentanyl Citrate Injection 100mcg/2mL	
Fentanyl Citrate Injection 500mcg/10mL	
Morphine sulphate Injection 10mg/mL	
Morphine sulphate Injection 15mg/mL	
Morphine sulphate Syrup 15mg/mL	
Morphine sulphate Syrup 10mg/5mL	
<b>Antidotes for narcotic poisoning</b>	
Naloxone Injection 400mcg/mL	
Methadone Tablet HCl 5mg	
<b>Summary of the narcotic drugs</b>	<b>Frequency (%)</b>
Morphine sulphate [injectable and syrup (10 and 15 mg/mL)]	4 (40.0)
Pethidine [Injection and tablet (50 mg)]	2 (20.0)
Fentanyl citrate [injection 100 mcg/2mL and 500 mcg/10mL]	2 (20.0)

All the participants however reported that "the last consignment for all the controlled drugs mentioned was received from FMS in 2017", while naloxone and methadone are antidotes which are usually supplied with the opioids, in case of opioids poisoning. Participants also cited that only powdered morphine is available in their respective hospitals, as at the time of the study, while "all the other narcotics are out of stock". They however reported the irregular supply of the needed narcotics and when they are available, "the expiry date will be less than three months". Participants also mentioned that "patients sometimes buy pethidine and morphine powder in "open drug market" for continuation of their treatment when not available in the hospital. In addition, participants were not aware of the implementation of the recommendations of the national policy for controlled medicines on the decentralization of the FMS to the six geopolitical zones of Nigeria, and the local production of some schedule I drugs by some licensed companies.

#### **Disposal of expired narcotic drugs**

Participants from five out of the six hospitals reported that expired narcotic drugs are disposed in line with

established procedure for disposal of narcotics, but participants from one of the healthcare facilities mentioned that "the expired drugs collected in the sealed cupboard that should be collected by NAFDAC are still waiting for collection for almost two years".

#### **Perception of the influence of government policy on pain management in the practice setting**

All the participants (39; 100.0%) perceived an improvement in the management of pain in their practice setting. They mentioned that there has been an increase in the number of prescriptions for oral morphine and other opioids for the management of pain, especially among patients with chronic diseases. They however mentioned that the "non-availability of the first-line opioid drugs has made it impossible to meet the demand for the medicines, thereby making the patients not to have benefited maximally". They reported that non-opioids and weak opioids such as pentazocine and tramadol are dispensed to patients for pain management when the strong opioids are not available. Participants also reported that pharmacists were usually "handicapped by the non-availability of

narcotics and as a result they were able to question the concerned stakeholder about the relevance of the training when the prescribed drugs are not available".

#### **Perception of the effectiveness of the pain management guidelines in Nigeria healthcare system**

All the participants (39; 100.0%) perceived that the guideline has been effective in creating awareness as "doctors are prescribing opioids more for those who need them". It was reported that "before the training on the policy guideline on pain management, morphine was rarely prescribed and used for patients". However, "due to cancer upsurge, there is higher need for more effective pain management". The participants opined that "even though the pharmacists write a monthly report highlighting the consumption pattern, it appears these reports are not used to compute the demand". They mentioned that "there is usually a very long lag time between the time requests are made for narcotics and when the drugs are supplied by the FMS".

#### **DISCUSSION**

In this study, it is noteworthy that the participants were aware of the pain management guidelines and showed adequate understanding of the guidelines and the WHO analgesic ladder. Also the training undergone by participants on pain management at one time or the other, especially from the FMOH led to improvement in pain management practice in their respective settings. This appears encouraging and may further buttress the strategic impact of training in improving healthcare providers' practice.<sup>12</sup> Studies have indicated that education and training of healthcare providers are important interventions that improve skills which reflects positively on the patients.<sup>32,33</sup> Thus, consistent training on effective pain management following the established guidelines and protocol need to be encouraged among healthcare professionals including pharmacists, so as to ensure sustainability of government policy in this regard.

In addition, participants perceived that the pain management guideline has been effective in creating awareness on rational prescription and use of opioids. They however opined that the non-availability or erratic supply by the Federal Medical Store (FMS) for most first-line opioid narcotics such as morphine has not made the patients to benefit maximally from treatment. Consequently, many patients have resulted into the use of some alternative narcotic drugs such as tramadol and pentazocine for treatment of moderate-to-severe pain. In Nigeria, even though, tramadol is a Prescription Only

Medicine (POM), it is usually found in open drug markets largely because of weak enforcement of drug-related laws and regulations.<sup>29,34</sup> Non-availability of opioid analgesics has also been reported in some other developing countries, probably due to strict regulations as well as the bureaucratic process involved in the procurement of opioids, while the long shipping time often results in the importation of opioid drugs that are close to the expiry date.<sup>12,21,22,35,36</sup> The inadequate availability of morphine for medical use might have driven the pressure on tramadol and pentazocine to be significantly increased. At present in Nigeria, there is an upsurge in cross-border trafficking and illicit supply sources for narcotic products especially tramadol<sup>29</sup>, thereby creating a potential harm to the public. The administration of supra-therapeutic doses of tramadol to obtain a similar effect to morphine might lead to death, as well as other forms of fatalities.<sup>24,29</sup> Despite the available data obtained from the first quantification/estimation of Nigeria's needs of controlled substances for medical and scientific purposes in 2017<sup>23,34</sup>, access to opioid medicines is still a big challenge.<sup>34</sup> There appears to be a gap between the demand and supply of narcotics.<sup>24</sup> Furthermore, the approach to ensure improved availability and accessibility to controlled medicines, including local manufacturing of schedule I narcotics and decentralization of its warehousing proposed by the Policy in 2017 have still not been implemented.<sup>24,25,36</sup> Therefore, there may be an urgent need for a more proactive approach so as to meet the growing demand for narcotics by the patients who are in genuine need.

Although, participants from five out of the six hospitals reported that expired narcotic drugs are collected for disposal in line with established protocol, they however mentioned that drug disposal through collection by NAFDAC has been erratic, which often lead to stockpiling of expired drugs. It is noteworthy to mention that this assertion was made in spite of the call by NAFDAC that hospital and community pharmacies should ensure proper disposal of expired drugs to prevent recirculation of such products, which might increase the potential risk of contamination of our environment.<sup>37,38</sup> In this study, participants however make suggestion that the expired narcotics should be properly disposed by NAFDAC, the regulatory agency saddled with the responsibility, in a timely manner to avoid pilferage and abuse. Nevertheless, considering the danger of expired drugs to the society, it may be necessary that wherever practical, an alternative method for drug disposal should be

explored, particularly for drugs such as opioids and antineoplastic that present disposal problems.<sup>39,40</sup> The alternative disposal method may include the possibility of returning unusable drugs to the manufacturer or the donor for safe disposal.<sup>39,40</sup>

Despite the useful information from this study, its limitation includes the small sample size, only descriptive study, coupled with non-coverage of the six geopolitical zones. Thus, the findings of the study may not be generalised to the entire hospital pharmacists in Nigeria.

## CONCLUSION

The participants from all the selected teaching hospitals were aware of the guidelines for pain management and show adequate understanding of the guidelines and the pain management ladder. Overall, the participants perceived an improvement in the management of pain in their practice setting after the training on pain management by the FMOH. However, non-availability or erratic supply of narcotics was the major barrier identified to have hindered effective pain management. Therefore, there is a need for adequate mechanisms of funding and procurement to ensure sustained availability of the commonly prescribed narcotic medicines, while a strategic plan of actions to implement the National Policy for Controlled Medicines should be vigorously pursued.

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