



Factors that influence pharmacists' efforts in addressing substance use in Nigeria: An exploratory study



Kunle Rotimi^{a,*}, Favour K. Edeh^b, Jimmy Aiden^a, Ademola Joshua Itiola^c, Kehinde Obamiro^d

^a Malaria Consortium, Nigeria

^b School of Pharmacy, Nnamdi Azikiwe University, Nigeria

^c West African Postgraduate College of Pharmacists, Nigeria

^d Centre for Rural Health, University of Tasmania, Australia

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ABSTRACT

Introduction: Substance use is a major global public health problem. Over the years, the burden of substance use has increased worldwide, with Nigeria having a prevalence that is substantially above the global average. Tackling this challenge requires a collaborative effort between different health professionals. Despite the critical roles pharmacists could play in substance use prevention and management, exploration of pharmacists' role in mitigating substance use in society has received limited attention in most sub-Saharan countries. In this study, we explored the experiences of pharmacists in substance use prevention and management.

Methods: We conducted semi-structured interviews to explore pharmacists' perceptions of their roles in the prevention and management of substance use in Nigeria. Following data transcription, we conducted a thematic content analysis.

Results: The four major themes that emerged included 1) the extent of pharmacists' involvement in the decision-making process for addressing substance use, 2) factors that influence pharmacists efforts in addressing substance use in Nigeria, 3) how to improve rational prescribing practices and, 4) capacity building to enhance pharmacists participation in addressing substance use.

Conclusion: Pharmacists have the opportunity to play critical roles in the prevention and management of substance use, but several individual and systemic challenges limit their full potential. Addressing these challenges is crucial in increasing pharmacists' participation in preventing and managing substance use.

1. Introduction

Substance use is a major public health problem globally.¹ Available evidence suggests that the number of people who used drugs worldwide increased by 30% between 2009 and 2017 of which 10 % is attributable to population growth.² Nigeria's 2017 estimated prevalence of 14.4% is substantially higher than the global average of 5.5%.^{3,4} According to the National Survey on Drug Use and Health, one in seven Nigerians aged 15 to 64 years reported using a substance of abuse other than alcohol and tobacco in 2017.⁵ Of these individuals, up to 10.6 million potentially abused cannabis, 4 million were addicted to pharmaceutical opioids while 2.4 million used codeine- or dextromethorphan-containing cough syrup.⁴ Misuse of prescription medications is linked with physical and psychological health issues⁶ and is associated with increased risk of trauma and injury.^{7,8} Prolonged misuse of these medications can also result in chronic medical conditions, drug dependence and even death.⁶

Substance use has been linked to several economic and social ills.⁹ Many recreational drug users engage in criminal activities ranging from theft to burglary.⁵ This has increased the number of young adults in

correctional facilities across Nigeria.¹⁰ A study conducted in Lagos, Nigeria, found that adolescent non-medical drug users are more likely to be involved in criminal activities than non-drug users.¹¹ Drug users are also prone to drug overdose deaths¹² and drug-linked viral disease transmission such as HIV, Hepatitis B and C.¹³ Also, several drug non-medical drug users have been reported to pay less attention to their jobs and families, ultimately decreasing their productivity in society.²

Reversing this trend and minimizing the associated burden of drug use on society requires collaborative effort among stakeholders. Part of such effort needs to come from community-based health professionals, including pharmacists and others involved in primary care who are in routine contact with the populace. Traditionally, the pharmacist's role has been dispensing medications at doctor's request. In the last few decades, pharmacists' roles have expanded to include pharmaceutical care, which is a more patient focus role, and working as medication experts in clinical settings.¹⁴ Pharmacists are now important stakeholders in the management and prevention of substance use. As one of the most accessible health professionals,¹⁵ pharmacists have more recently began to assume additional responsibilities in the governance of drug of abuse, including

* Corresponding author.

E-mail address: rotimiolukunle@gmail.com (K. Rotimi).

controlling the availability of such drugs in the hospital and community pharmacies, educating and raising awareness about drug use. For example, the role of pharmacists in screening patients for substance use disorder (SUD) and providing required intervention and referral when necessary has been reported.¹⁶

Pharmacists play essential roles in educating the populace about medications and how to optimize their use^{17,18} and are becoming increasingly involved in the implementation of public health initiatives. This represents a major contribution of pharmacists in preventing substance use. Over half of the registered pharmacists in Nigeria work in community and hospital settings where routine interaction with patients happens the most; hence their expertise can be leveraged to mitigate substance use in society.^{19–21} In more advanced countries, pharmacists are trained and participate in overdose prevention and response. For example, pharmacists provide clean needles and opioid substitution as part of professional responsibilities in addressing substance use disorder.^{22–24} In addition, they educate the public on the use of clean needles and opioid substitution like naloxone.²⁴

However, there is a paucity of evidence on pharmacists' actual and potential role in reducing the risk of substance use in Nigeria, and the enablers and barriers to addressing substance use. We, therefore, conducted a study to bridge this evidence gap. An understanding of the level of involvement of pharmacists in the prevention and management of substance use will provide insights on how to harness and mobilize the skills of pharmacists in mitigating the dangers of substance use.

1.1. Country context

The Pharmacists Council of Nigeria regulates pharmacy practice in Nigeria. Pharmacists practise in several areas, including administrative, academic, hospital, industry, community and public health settings. The minimum qualification to practise as a pharmacist in Nigeria is the Bachelor of Pharmacy Degree, although there is a rising number of institutions offering the Doctor of Pharmacy, which may soon be the degree of choice for most new pharmacists.^{25,26}

A recent study on the distribution of pharmacists across the various practices in Nigeria, showed that the country has nearly 22,000 pharmacists, most of which practise in the community.¹⁹ Community pharmacists work in well-regulated medicine retail known as community pharmacies which are a primary source of medicines for the public. In addition to well-regulated community pharmacies, open drug markets,²⁷ stores and retail outlets operated by patent and proprietary medicine vendors (PPMVs) make non-prescription medicines available to the public.²⁸ However, studies have shown that these outlets also stock prescription medicines²⁹ and often act as channels for some prescription medicines.³⁰

Currently pharmacists in Nigeria are trained as healthcare professionals authorized to import, export, mix, compound, prepare, dispense, counsel, sell, procure and distribute drugs and poisons with little or no training on substance use.³¹ A recent survey conducted by the Pharmaceutical Society of Nigeria (PSN) also indicated that few pharmacists had received training on substance abuse disorders. In response to these gaps, pharmacy education began increasing the substance use, dependence and management component of pharmacy training more than a decade ago. Despite these actions, pharmacists are currently not adequately equipped to manage and prevent substance use.

2. Methods

2.1. Design

We conducted semi-structured interviews with eight purposively selected practising pharmacists in Nigeria. The interviews were conducted in line with methods and guideline for semi-structured interviews described by DeJonckheere and Vaughn.³²

These interviews were conducted in Kaduna State, Nigeria, during the November 2019 National Convention of the Pharmaceutical Society of Nigeria. The interviewer, FKE, is a female pharmacist with 3 years

postgraduation experience and has no relationship with any participants. All participants were approached and asked for consent to participate in the study.

2.2. Interview protocol

The interviews were conducted using an interview guide that was designed following a review of relevant literature.³³ The interview guide was structured into three sections and covered 1) perceived understanding of the broader debates on substance use, 2) roles of community pharmacists in the prevention and management of substance use and 3) knowledge and expertise of community pharmacists in carrying out these functions (Appendix 1). Before the commencement of the study, the interview guide was pretested among three pharmacists to determine how clear and concise the interview questions were and to estimate the duration of the interview. These three pharmacists were not involved in the main study. Each interview lasted for 15–30 minutes.

For the purpose of this study, we defined 'substance use' as 'the use of a drug or related substance for a purpose not consistent with legal or medical guidelines'.³⁴ All interviews were audio recorded, after which, they were de-identified and fully transcribed. We interviewed participants until we achieved data saturation.

2.3. Inclusion criteria and recruitment strategy

To be included in this study, the participant must be a registered pharmacist with >1 year of experience. Participants were approached for a face-to-face interview by FKE. Participant who accepted to participate in the study were then interviewed using the interview guide (Appendix 1).

2.4. Data analysis

Content analysis was utilized to identify themes in this study (theoretical framework was not used in the analysis), to ensure that the emergence of new findings is not limited.^{35–37} We analyzed responses from each participant without alterations to ensure the retention of their actual responses. This analysis was carried out by 4 of the investigators (FKE, KR, KO and AJI). Themes were identified from participants' responses by scanning through the transcripts. The identified themes represented the fundamental coding framework under which similar identified codes were grouped, as soon as a theme was identified we further searched through the transcript for responses that fits into each theme, the coding protocol was therefore inductive in nature. The validity of the themes and codes was confirmed by ensuring independent thematic analysis by the investigators and consensual agreement among the research team. Peer debriefing was conducted to agree on theme and codes for each category, to minimize biases from the analysis. NVivo 11 software was used to support thematic content analysis and coding.

2.5. Ethics approval

Ethics approval was granted by the Research Ethics Committee of the Niger Delta University Teaching Hospital, Oloibiri, Nigeria with ethics approval number: (NDUTH/REC/ 0030/2019).

3. Results

The respondents were eight pharmacists with more than one year of post-qualification experience in Nigeria (Table 1). Most of the respondents were males and Bachelor of Pharmacy degree holders. Fifteen potential participants were initially approached, of which only 8 agreed to participate in the study; most of the refusers were females.

The participants' responses were analyzed, and four major themes were derived from the analysis as follows.

1) The extent of pharmacists' involvement in the decision-making process for addressing substance use, 2) factors that influence pharmacists'

Table 1
Demographic characteristics of respondents.

Respondent	Sex	Highest Qualification	Years of Experience
1	Male	B Pharm	11
2	Male	B Pharm	>1*
3	Male	PhD	20
4	Female	Pharm D	7
5	Male	M Pharm	12
6	Male	B Pharm	5
7	Male	B Pharm	13
8	Male	B Pharm	6

* Respondent was not specific on the number of years of experience but only specified >1 year.

efforts in addressing substance use in Nigeria, 3) how to improve rational prescribing practices and 4) capacity building to enhance pharmacist's participation in addressing substance use.

3.1. Extent of pharmacists' involvement

When discussing the activities and level of involvement in the prevention and management of substance use, the following subthemes arose: (i) controlling access to drug of abuse, (ii) providing drug information and (iii) research.

- a. Controlling access to drugs of abuse: Pharmacists directly or indirectly limit access to drugs of abuse by refusing to dispense these drugs to individuals who could misuse them. This is primarily enforced by ensuring that these drugs are not dispensed without a prescription.

'...I make sure that without proper drug prescriptions such drugs are not going to be dispensed or given to them' (Responder 8, Male)

Pharmacists also reported reducing or refusing to stock a drug of abuse.

'...I hardly replenish them and do so in minimal quantities so as to avoid the pressure of pushing out these drugs' (Responder 4, Female)

Respondents also gave the impression that pharmacists in Nigeria reduce the dosage of drug of abuse and by extension the quantity dispensed to patients to prevent misuse. They are, however, not licensed to perform this role.

'... six months ago, I had a client who was very addictive to tramadol, he was never satisfied, basically he became intolerant to the dose he was taking, I had to step in, began counselling section, he started having withdrawal symptoms, he was so much addicted that he takes as much as 200mg twice daily so we started counselling, tapered the dose and as we speak now, he has totally recovered from and he can feel comfortable without taking the drug for some time' (Responder 1, Male)

- b. Educating patients and staff: Respondents reported providing information that increases patients' awareness and understanding of drugs of abuse, irrational drug use and the associated dangers. With this information, patients are empowered to either avoid drugs of abuse or better placed to comply with substance use management interventions. Two respondents described this role as the primary substance use prevention and management service provided by pharmacists in Nigeria.

'.....We offer patient education and staff orientation. We are also careful of the type of staff we employ because most times employing non-professionals to work alongside professionals can be dicey and these non-professionals observe what we do without even knowing the rationale behind it and then go ahead and repeat the process thereby raising concerns for drug abuse (Responder 7, Male)

- c. Research: Pharmacists also participate in substance use prevention and management-related research projects. The respondents only referenced community-based research.

'...We also carry out community-based research in our pharmacy from time to time' (Responder 7, Male)

3.2. Factors that influence pharmacist's efforts in addressing substance abuse in Nigeria

The respondents identified factors influencing pharmacist's efforts in addressing substance use in Nigeria. Five key sub-themes were identified as summarized below .

- a. Competition from professionals and non-professionals: Competition between pharmacists complying with regulatory provisions and others that do not was identified as a major barrier for pharmacists' involvement in preventing and managing substance use. Also, patent medicine vendors with limited training on medications operate alongside pharmacies in Nigeria. These non-pharmacists who are only legally allowed to stock over-the-counter medications (OTCs), however breach legal requirements for their operation and go ahead to stock and sell prescription drugs thereby creating an additional layer of competition for ethically-compliant pharmacies.

'...The competition in the market is against pharmacists as those drugs we try to regulate by limiting access is very much available in the open drug market and patent medicine stores' (Responder 5, Male)

'Curbing competition with the open drug market and patent medicine vendors will help our cause tremendously' (Responder 5, Male)

- b. Poor regulations: Poor enforcement of professional and government-specific regulations on substance use was also stated as a barrier to pharmacists' involvement in substance use prevention.

'...There should be a strict regulation policy in place regarding prescribing of controlled and/or abused drugs with by laws for offenders.' (Responder 7, Male)

'Number 1 barrier is government failure to employ pharmacists as leaders in agencies that prevents drug abuse and trafficking and control in the country because I believe that if we have enough capable hands in such agencies like NAFDAC, NDLEA[National Drug Law Enforcement Agency] who understand what drugs is all about and its more easier to identify which substance or drug is that of abuse than someone that just have a maybe 2 months training on what drug is all about therefore we are lagging behind in that aspect. Imagine that an agency like NDLEA do not have enough pharmacists even as I am talking to you now. Poor salary is also part of it and poor numbers of pharmacist in NAFDAC is also part of it' (Responder 8, Male)

- c. Pharmacy proprietorship: Owners of pharmacies who are not pharmacists were identified as a major barrier since they tend to influence professional activities carried out within the pharmacy premises

'...most owners of community pharmacies are not professionals and tend to influence and limit what a pharmacist can do' (Responder 2, Male)

- d. Incentives: Respondents mentioned providing incentives and addressing competition by open drug market operators as enablers of pharmacists' involvement in substance use prevention and management

‘...seeing a way of providing incentive to those willing will go a long way to both stimulate interest and instigate commitment to the few who have the good of the greater society at heart, even though that situation might never happen in Nigeria’ (Responder 3, Male)

‘Employing pharmacists in agencies like NDLEA [National Drug Law Enforcement Agency], ministries of health, and NAFDAC [National Agency for Food and Drug Administration and Control]. Improvement in their salary too because I believe if health practitioners are being paid very well, they would avoid compromising their stands. Because a pharmacist may be vulnerable to drug traffickers who affords to pay them some money. They will usually consider the offer because they are not eating very well because their salary is not enough such a person would fall a victim of complying with what the drug traffickers told him to do because he needs the money. If the pharmacists are being paid very well, they will know that service to humanity is better than service for money’ (Responder 8, Male)

- e. Ethical commitment: The pharmacist's personal belief system or ethical leaning may influence his or her desire to comply to pharmacy standard of practice.

‘Your conscience is the major enabler. The perspective that you are responsible for your society will make you very willing to contribute your quota.’ (Responder 6, Male)

‘...The pharmacist perspective and awareness of his or her society is the major determinant here because nobody flogs you for not doing drug abuse prevention and management and most people do not think they owe the society anything. When pharmacist begin to see the society as their own it helps a lot’ (Responder 6, Male)

3.3. How to improve rational prescribing practices

Suggestions by participants on how to achieve best prescribing practices were grouped into the following subthemes: (i) Multidisciplinary prescribing, (ii) Creating multiple approvals, (iii) Direct communication between prescribers and pharmacists.

- a. Multidisciplinary prescribing: Approaching prescribing from a multidisciplinary perspective where different health professionals participate in the decision-making process for drugs of abuse will help in promoting rational prescribing.

‘...Best practice can only be established when decisions regarding a prescription are not solely left in the hands of the clinicians (i.e., doctors) but rather with pharmacists working together with other health care professionals and even nurses who get to administer the injectable partner at the prescribing level’ (Responder 3, Male)

‘...Prescribing should be approached from a multidisciplinary perspective’ (Responder 4, Female)

- b. Creating multiple approval levels: Having more than one level of prescriber involved in the approval process for the prescription of controlled substances will help in improving rational prescribing as this additional approval layer(s) will act as a barrier to unethical prescription.

‘...Also, such prescriptions should be approved by at least two or three other clinicians’ (Responder 5, Male)

- c. Direct communication between prescribers and pharmacists: Direct communication between prescribers and dispensing pharmacists is a major way to ensure rational prescribing of controlled medicines. One

of the respondents suggested that drugs of abuse should only be dispensed to prescribers and not directly to patients as a way of validating the identity and authenticity of the prescriber.

‘... making adequate enquiries to ensure that prescription is genuine by calling the prescriber is also helpful to make sure that drug abuse is curtailed amongst the youths’ (Responder 8, Male)

‘...I can only suggest that the clinicians come themselves to get the substance of abuse from the pharmacists rather than scribbling it into a prescription paper’ (Responder 5, Male)

3.4. Capacity building for pharmacists on management and prevention of substance use

Respondents also recommended additional training for pharmacists to improve their knowledge in managing substance use.

‘... Also, a course strictly talking about drug abuse incorporated as a subject of its own in the pharmacy curriculum would help a lot’ (Responder 5, Male)

4. Discussion

This study yielded valuable insights into the current roles played by pharmacists in the prevention and management of substance use, factors that influence pharmacists' efforts in addressing substance use as well as strategies for improving the participation of pharmacists in the prevention and management of substance use in Nigeria.

Pharmacists in Nigeria perceived themselves as contributing towards the prevention of substance use by controlling access to drugs of abuse, providing drug information, and participating in community-based research projects. These mainly preventive roles³⁸ contribute to reduced access to substance of abuse for individuals already using them. This finding is in agreement with recent research studies where eliminating tobacco use³¹ and preventing substance use by ensuring patients adhere to their medical use³⁹ were identified as roles carried out by community pharmacists. While these identified roles are important and should continue, a major gap is the limited involvement of Nigerian pharmacists in managing patients abusing substances when compared with developed countries where pharmacists routinely provide counselling and treatment services.^{18,40–43} There is also no policy backing for pharmacists' participation in substance use-related harm reduction activities like needle exchange or opioid substitution therapy programmes in Nigeria as obtainable in more developed countries.^{24,44} Certainly, a review of national drug policy in Nigeria is required to include additional responsibilities for pharmacists.

The participants also believed pharmacists should be able to provide scientific information on the effect of substance use to key stakeholders, including other health workers and participate in scientific research on substance use. These roles are common in prescription medicine use prevention where pharmacists can provide information to clinicians and patients on the addictive potential of prescribed medications.^{43,45,46} These perceived roles were identified in other studies on drug abuse prevention by pharmacists.⁴⁶

Advancing pharmacists' involvement in mitigating the menace of substance use will require careful consideration of the factors identified in this study (Fig. 1). The first set of factors primarily centered around the poor enforcement of drug and pharmacy-practice related regulations in Nigeria.^{47,48} Participants, for example, noted that the challenge of illegally stocking of prescription drugs by proprietary and patent medicine vendors (PPMVs) still persists²⁹ indicating lapses in pharmacy regulation. This practice by PPMVs is in contrast to the national drug policy in Nigeria that only allows them to stock certain over-the-counter medications (OTCs).⁴⁴ Additionally, pharmacy owners who are non-pharmacists sometimes prevent pharmacists from discharging their professional responsibility of ensuring that medicines are only dispensed in accordance with the country's ethical standards. The continued operation of open drug markets where potential

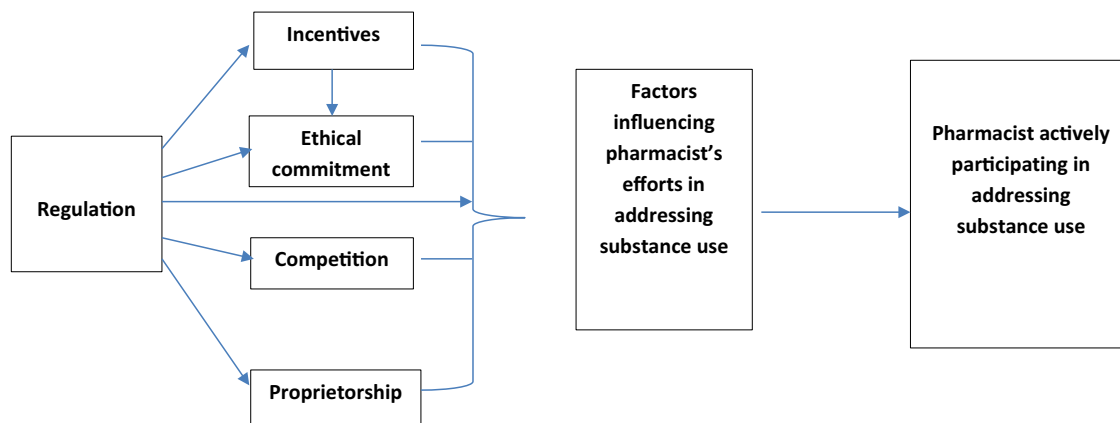


Fig. 1. Framework showing the various factors affecting pharmacists' efforts in addressing substance use in Nigeria. The figure shows the posited relationship among identified factors. Regulation can affect ethical commitment, competition, incentives, and proprietorship, while incentives may influence the ethical commitment of a pharmacist to adhere to standards of practice.

and actual substance users could easily access these drugs further makes pharmacists' enforcement of "no valid prescription no drug" of limited impact. These open markets continue to operate²⁷ even though they were declared illegal years ago.⁴⁹ Thus, there is a major gap in the enforcement of existing laws vital to mitigating substance abuse in Nigeria,³⁰ which may impact pharmacist roles in substance use.

These observations call for stricter enforcement of the country's pharmacy-related policies and laws. The leadership of the statutory regulatory bodies should be co-opted in this effort with decisive disciplinary action taken against erring professionals. An example of such leadership action was in 2018 when the leadership of the Pharmacists Council of Nigeria (PCN) announced the commencement of the enforcement of regulation of the open sale of drugs.⁵⁰ If thoroughly implemented, this effort is expected to improve the level of accountability for managing controlled substances and should reduce access through illicit channels and ensure better accountability.⁵¹ Implementing these proposed recommendations will further motivate professionals discharging their duties by the highest possible ethical standards.

In addition to strengthening the existing regulatory framework and enforcement of relevant policies, the potential of pharmacists in mitigating substance use will be better harnessed if the general populace is more open to paying for add-on services beyond medication dispensing. Our study suggests that most of the profit of community pharmacies in Nigeria is realized from the sale of drugs hence there is little incentive to provide services that will not significantly improve earnings. Also, other, other non-financial incentives in the form of professional recognition and creation of enabling environment for pharmacy practice should be explored.

As shown in the conceptual framework, all identified factors affecting pharmacists' efforts in addressing substance use are interconnected (Fig. 1). Regulation influences incentives, ethical commitment, competition, and pharmacy proprietorship. Pharmacists Council of Nigeria, 'a Federal Government parastatal established by Act 91 of 1992 (Cap P17 LFN 2004) charged with the responsibility for regulating and controlling Pharmacy Education, Training and Practice in all aspects and ramifications' regulates pharmacy practice in Nigeria.⁵² This includes licensing of ownership and all matters relating to pharmaceuticals. Therefore, the body has a central role in addressing these issues. Another identified relationship is between incentives and ethical commitment (Fig. 1). Economic incentives could compromise a pharmacist's ethical commitment⁵³ For instance, a pharmacist may decide to sell products that pose health risk, like tobacco, to make money or recommend branded products instead of cheaper generic alternatives due to high financial gain.⁵³ Overall, these factors require consideration while promoting pharmacists' role in addressing substance use in Nigeria.

On ethical prescribing, respondents highlighted strategies that could complement regulatory efforts. These include multidisciplinary prescribing, creating multiple levels of approval and direct communication between

prescribers and pharmacists. Multidisciplinary prescribing and multiple approval levels implies the participation of more than one person within the same health profession (2 or more clinicians) or different health profession (pharmacists, nurses, and others) in making decision on prescribing a drug of abuse. Also, direct communication between prescribers and pharmacists can facilitate validation and authentication of a prescription. Considering different professional views in making prescription decisions may help ensure a more rational decision for substances of abuse as shown in an intervention study where participation of pharmacist in prescribing oxycodone helps in reducing its reuptake by patients.⁵⁴ This suggestion sounds logical because it creates an additional approval level that help validate the rationality. However, this may delay the prescription process, consequently prolonging the application of the desired therapeutic intervention and may also increase the waiting time in hospital thereby reducing patient satisfaction with the quality of care at health service delivery points. This finding further reaffirms the need for inter-professional collaboration in prescribing medications with high potential for misuse. Similarly, pharmacists are now legally required to identify potential drug therapy problems before dispensing a medication according to the doctor's prescription, which means pharmacists will not be excluded from litigations arising from clinical drug abuse resulting from repeated routine dispensing of medication without adequate diligence.

The finding from this study aligns with previous research on the need for substance use training for pharmacists.^{45,55} The participants suggested including substance use-focused training in the overall pharmacy training. This may be in the form of more detailed and expanded training on substance use in pharmacy schools and incorporation of substance use into the continuous education trainings for practising pharmacists. These pieces of training will further equip pharmacists with additional skills and knowledge required to provide quality substance use services.⁵¹ The gap in training was recently highlighted in a recent survey conducted by the Pharmaceutical Society of Nigeria (PSN) which indicated that only 16% of pharmacists in the country have been trained on substance use disorders.⁵⁶ Similar findings were also reported in more developed countries, indicating that pharmacists are not well equipped for the management of substance use and other related conditions.⁴⁰ Recently, the Association for Multidisciplinary Education and Research in Substance Use and Addiction (AMERSA) has developed core competencies for pharmacists to address substance use in the 21st century,⁵⁷ which pharmacy educators, regulators and policymakers can adapt for Nigeria.

However, this study is not without limitations; almost all the participants were male, which shows an unequal gender representation. This may have skewed the views expressed in favor of the masculine perspective.⁵⁸ While the years of practice of participants (>5 years for all but one) may have enriched their responses, the homogenous nature of the respondents is a major limitation of this study. It is also noteworthy

that the goal of this study is to provide a narration of the potential and current roles of pharmacists in the management and prevention of substance use in Nigeria hence we did not use a theoretical framework.

While this study provides a fundamental understanding of the potential roles of pharmacists in the management and prevention of substance use, a more comprehensive study is required to provide a detailed understanding of the challenges and requirements for the full operationalization of the active participation of pharmacists in preventing and managing substance use. Also, an understanding of how the country's supply chain network could be contributing to unregulated access to substances of abuse will be invaluable in developing a comprehensive policy to address substance use in Nigeria.

5. Conclusion

Pharmacists have the opportunity to play critical roles in the prevention and management of substance use, but several personal and systemic challenges limit their full potential. Addressing these challenges is crucial in increasing pharmacists' participation in preventing and managing substance use in Nigeria.

Disclaimer

The findings and conclusions in the report are those of the authors and do not necessarily represent the official position of the organizations linked to the authors.

Authors' contributions

KR and KO were involved in the conceptualization and funding of the study. KR, KO and FKE participated in the study design. KR, KO, FKE and AJI participated in data collection and analysis. KR, KO, JA, AJI and FKE wrote and carried out reviews and editing of the manuscript. All authors read and approved the final manuscript.

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Ethics approval and consent to participate

Ethics approval was granted by the Research Ethics Committee of the Niger Delta University Teaching Hospital, Oloibiri, Nigeria with ethics approval number: (NDUTH/REC/ 0030/2019). Study participants gave verbal informed consent.

Consent for publication

Not applicable.

Competing interests

The authors have declared they have no conflicting interest.

Appendix 1

Showing interview structure and questions

Interview structure	Interview questions
<i>Perceptions of the broader debate</i>	To what extent are you aware of debates around substance use? What do you think are the most significant contributors to the

(continued)

Interview structure	Interview questions
<i>Perspectives on the role of community pharmacy in the prevention and management of drug abuse</i>	development of substance use locally and globally? Who do you perceive to be responsible and who has the capacity to address this issue? Could you please talk a little bit about the typical circumstances in which you are involved in the prevention and management of substance of abuse? What type of substance use have you been involved in preventing and or managing (opioid abuse, alcohol abuse, cannabis etc) What are the roles of pharmacy in decisions about drug abuse and the use of substance of abuse in the community? To what extent does pharmacy engage in, or input into, decisions about prevention and management of substance use? What clinical situations are the most challenging from a pharmacy perspective regarding substance use? Could you discuss activities you are involved in within the pharmacy related to the prevention and management of substance use Could you discuss control substance stock in your pharmacy and other drugs that are prone to abuse but are yet to be identified as control drugs Could you discuss other substances/combination of substances used in the community as drugs of abuse? Could you mention any barriers to the involvement of pharmacists in the prevention and management of substance use? Could you mention any enabler to the involvement of pharmacists in the prevention and management of substance use?
<i>Knowledge and expertise</i>	How knowledgeable do you feel, in your day-to-day pharmacy work, regarding the prevention and management of substance use? What education/training would be helpful regarding the prevention and management of substance use from a pharmacy perspective? Can you explain how you would help to establish 'best practice' in prescribing substance of abuse?

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