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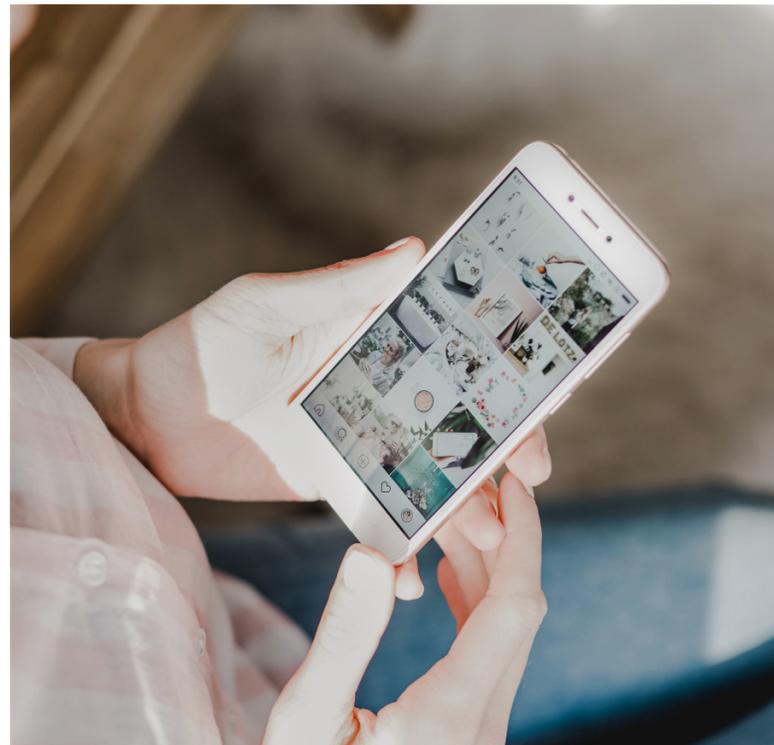
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# The Role of Pharmacists in Curbing the Recent Spike in Drug Misuse

by: Ajuluchukwu Elvis Onyishi

## Introduction

A drug is any substance other than food that changes the way the body or mind functions. It may or may not have medicinal properties and can come from plants or be synthesised.

Pharmacists are custodians of drugs and take full responsibility for the provisions of drug therapy, in line with pharmaceutical care principles. To further appreciate the role of pharmacists in curbing drug misuse, it will be paramount to clarify a few terms often employed in drug use. Some of these include drug misuse, abuse, addiction, and dependence.

To misuse a drug is to use a drug for the purposes it is not intended for. It often involves not following medical instructions, but the person may not necessarily be looking to “get high” from their use. Signs of drug misuse include:

- Taking a dose at the wrong time
- Stopping to take a dose
- Accepting prescription drugs from a friend
- Taking drugs for reasons other than what they are prescribed for

Drug abuse, also called substance abuse or chemical abuse, often follows drug misuse, although it is a separate entity on its own. It is a disorder characterised by a destructive pattern of using a substance that leads to significant problems or distress. People who abuse drugs typically do not have a prescription for what they are taking and also use drugs for other feelings associated with the drug such as euphoria and relaxation. Signs of drug abuse include:

- Using a drug to “get high”
- Using prescription drugs without a prescription
- Exceeding a recommended dose
- Chronic or repeated abuse

Essentially, the key difference between drug abuse and misuse is the individual’s intention when taking the drug. The terms are often used interchangeably and will be used as such in this write-up. Misuse and abuse of drugs can lead to inevitable negative consequences such as dependence and addiction. Drug addiction involves the continued use of a drug or substance for a purpose other than food. The individual here develops a severe physical and psychological dependence on drugs such that the compulsive behaviour is overpowering, despite knowledge of detrimental and negative consequences.

This behaviour is rewarded and reinforced via the brain’s reward pathway, primarily composed of the nucleus accumbens, ventral tegmental area, and the prefrontal cortex. Substance dependence on its own refers to a permanent physiological change, causing an individual to persistently crave the consumption of a particular substance. This occurs when neurons adapt to repeated drug use and only function normally in the presence of the drug. However, it is possible to be dependent on a drug without being addicted, although if one is addicted, one is most likely to be equally dependent. For example, a terminal cancer patient being treated with morphine for pain will experience withdrawal if the drug is stopped, but s/he is not a compulsive user of the drug. Therefore, this patient can be said to be dependent, but not addicted.

## Historical Perspectives

Drug use, misuse and abuse are as old as mankind. Human beings have always had a desire to eat or drink substances that make them feel relaxed, stimulated or euphoric. The start of farming around 6,000 BC led to the discovery of fermentation and subsequently the production of alcohol, which was used for the following:

- Seeing visions or gaining insights
- Dulling the pain of ritual mutilation in initiation ceremonies
- Coping with the thin air at high altitudes
- Relaxing during celebrations

Later on, the discovery of distillation saw an increase in the potency of alcohol from homemade wine (14% volume of alcohol) to absolute alcohol (100% volume of alcohol). With time, psychoactive chemicals in animals were isolated, motivated by a desire to achieve ‘bigger and better’ highs.

In Nigeria, a history of drug abuse predates the early trends of civilisation. Early crops cultivated included intoxicants such as wine, strong tobacco, opium and other psychoactive substances. However, the introduction of Islam (in the north) and Christianity (in the south) reduced this trend. Meanwhile, modern Nigeria witnessed a swift turn to drug abuse since the return of World War II veterans who fought in Malaysia and Burma. They brought with them concealed contents of cannabis (Indian hemp) as souvenirs. Subsequently, there was sporadic and illegal





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cultivation of cannabis as a widespread farm product.

The early 1980s saw the emergence of a wide variety of substances such as cocaine, heroin, and hallucinogens with high abuse potential. Regrettably, this trend is still prevalent today and even with an increase as the younger generation has gone further to improvise other drugs for abuse such as caffeine, certain antipyretics, codeine, tramadol, and other queer street combinations unique to various areas.

## Overview of Drugs of Abuse

Common drugs of abuse include alcohol, tobacco, marijuana, cocaine, opioids, club drugs (ecstasy), hallucinogens and sports drugs like steroids. Typically, most of these drugs act on the central nervous system and alter feelings and perceptions. They are classified according to their physical and psychological effects into:

1. **Depressants:** Drugs that suppress or slow the activity of the brain and nerves.

For example:

- Barbiturates; phenobarbital, thiopental
- Sedatives such as benzodiazepines, alprazolam, diazepam, midazolam
- Alcohol
- Opioids; heroin, codeine, morphine, oxycodone, methadone
- These are some of the most commonly prescribed medicines worldwide.

2. **Stimulants:** Drugs that increase the activity of the central nervous system.

For example:

- Cocaine (including crack)
- Amphetamine
- Caffeine
- Nicotine
- Ephedrine

3. **Hallucinogens:** Drugs that act on the central nervous system to alter the perception of reality, time and space.

For example:

- Psilocybin
- Ecstasy
- Morning glory seeds
- Ketamine
- Mescaline

4. **Inhalants:** Broad class of substances with the shared trait of being primarily consumed via inhalation. They are frequently abused by children and adolescents.

For example:

- Paint
- Glue
- Gasoline
- Marker or pen ink

- Lighter fluid

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5. **New psychoactive substances:** Drugs designed to evade existing drug laws.

For example:

- Synthetic cathinones
- Synthetic cannabinoids
- Ketamine
- Piperazine
- Some plant-based drugs such as khat and kratom

## Effects of Drug Abuse and Misuse

Different drugs affect the body in different ways. These effects can be short term or long term. Short term effects depend on the amount of drug used and the potency or purity of the drug. Long term effects largely depend on a person's age, gender, individual physiology, genetic makeup, and mental health condition.

However, irrespective of the variation in effect, it suffices to mention that all drug misuse and abuse impact negatively to one's health. This impact can be generally classified into the physical and psychological categories.

The physical effects of drug misuse and abuse include:

- Contraction of HIV, hepatitis and other illnesses
- Heart rate irregularities and heart attack
- Respiratory problems such as lung cancer, and emphysema
- Abdominal pain, vomiting, and constipation
- Kidney, and liver damage
- Seizures, and stroke

Similarly, psychological effects include:

- Wild mood swings, depression, anxiety, and violence
- A decrease in pleasure in everyday life
- Hallucinations
- Confusion
- Complications of mental illness

It is also important to note that the end effect of drug abuse and misuse is dependence and addiction. These often go hand in hand and can lead to significant impairment in many areas of a person's life from work to school and interpersonal functionality. Addiction increases the health care burden and equally exacts a high toll of responsibilities on both the affected individual and the society, through direct adverse effects of drugs, associated health costs and long term complications. This and many more effects of drug misuse classically form the basis for the pharmacist's intervention.

## The role of pharmacists in curbing the recent spike in drug misuse

Over the years, the pharmacy profession has undergone a series of changes in terms of philosophy and practice as it seeks to meet the dynamics of societal expectations. This has further redefined the role of the pharmacist to the society such

that in addition to dispensing medications, today's pharmacists have taken larger roles as medical counsellors, educators and advocates.

Pharmacists are an integral part of the health care team and are among the most trusted and most accessible health care professionals. This accessibility allows them to perform more patient care activities, including counselling, medication management and preventive care screenings. Moreover, in a generation ravaged by the plague of drug abuse and misuse, pharmacists play a role in managing and improving population health, particularly in areas such as tobacco cessation, nicotine addiction, abuse of narcotics and antibiotics.

Consequently, the role pharmacists ought to play in curbing the recent spike in drug misuse can be summed up in the following:

- Primary prevention
- Intervention
- Primary care
- Aftercare

Primary prevention or health promotion refers to efforts aimed to decrease the prevalence of a disease or disorder by reducing its incidence (Caplan, 1964). It includes all activities undertaken prior to an individual using the substance of abuse. Examples include educational programs and programs designed to reduce the availability of the drug of abuse. By this, pharmacists should engage in campaigns (both online and physical) against drug misuse and abuse, especially to the most at-risk population which comprises mostly teenagers. Pharmacists should also ensure effective and properly monitored distribution of drugs with high abuse potential, so as to reduce the rate at which these drugs enter the hands of abusers. Also, habits of selling prescription drugs to people without prescription and the underage should be totally curbed and frowned at. Similarly, pharmacists in the manufacturing sector should properly monitor the distribution of their products with high abuse potential, through a well-coordinated supply chain, so as to keep them away from abusers. An intervention involves the process of interrupting a person's harmful use of substances and presenting a means for developing alternatives. It basically involves early identification, removal

of the substance of abuse and long term maintenance without the substance of abuse. At this juncture, the pharmacist should educate and assist the patient in changing self-destructive behaviours, facilitate introspection about the consequences of risky behaviour and develop within the patient a commitment to carry out a plan of abstaining from the wrong use of drugs.

Primary care refers to efforts that should be employed by pharmacists in managing the sequelae of disorders prevalent in drug abuse patients. It involves detoxification and treatment of withdrawal symptoms and getting the patient to face the reality of abuse. This, of course, helps control drug misuse as negative behaviours are easily transmitted to others.

Aftercare involves psychological intervention strategies. It includes programs aimed at preventing the abuser from returning to the substance of abuse by controlling or limiting the use of the substances. Examples are motivational interviewing, relapse prevention therapy, contingency management and cognitive behavioural therapy. This approach often brings out the best in patients and their story serves as a deterrent for young people who may be cultivating the habit of abusing drugs wrongly.

In all, the best approach that should be employed and encouraged by pharmacists is primary prevention. This is in line with a 2004 study in the journal of the American Medical Association (Mokdad et al.) which showed that about half of all deaths in the United States in 2000 were due to preventable behaviours and exposures. Thus, irrespective of the traditional practice of tertiary care, primary prevention will nip abuse and misuse to the bud, generally reducing its burden to healthcare and society at large.

## Conclusion

Every member of the healthcare team has a special role to play in curbing drug misuse and abuse, so is everyone in society at large. Pharmacists on their own have an even more important role to play as custodians of drugs. This, therefore, is a clarion call to all and sundry, especially pharmacists to brace up to the challenges of drug misuse, for no nation grows with a substantial number of her population — especially the younger generation — being caught in the web of wrong use of drugs.

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# The New Role of Pharmacists to Eradicate Substance Abuse or Medicine by Prevention Program, Combating Drug Abuse and Illicit Circulation (P4GN in Indonesia)

by: Muhammad Fahrul Rizal  
*First Year Pharmacy Student of University of Indonesia*

## Introduction

The behaviour of the younger generation is now decreasing. This is because their future is gloomy by negative influences such as drugs. Drugs, also known as narcotics, psychotropic substances, and addictive substances, are effective in stimulating the central nervous system so it is able to calm the body in preventing disease if used in prescribed quantities. However, in large quantities, drugs can cause dependence on addicts. This is called drug abuse. Drug abuse is the use of one or several types of drugs regularly or regularly outside of medical indications, giving rise to physical, psychological and social dysfunction (Azmiyati, 2014).

The abuse of drugs is caused by three factors: family, individuals, and access. A perfectionist family, having conflicts that are not resolved, and lacking moral teaching causes pressure on individuals who are easily stressed. By stress, they can calm themselves down with negative things without being noticed by parents. Plus, they lack socialisation and education about the types of drugs and their effects.

In the external scope, Indonesia as a developing country is also a drug syndicate so that illicit substances can circulate freely on the market which makes it easier for them to gain access to. The prevalence of drug trafficking in Indonesia reaches 5 million or 2.23% of the total population aged 10-59 years old.

Therefore, there is a need for prevention efforts carried out by the government through the National Narcotics Agency (BNN) in collaboration with IAI (Indonesian Pharmacists Association).

There are two ways that can be done starting in the family approach, such as education and rehabilitation. Education is carried out as a primary prevention effort for those who have not or do not use and/or even do not know the drugs. Meanwhile, rehabilitation is carried out as secondary and tertiary prevention efforts. Rehabilitation can work well if there are counselling and pharmacotherapy for drug users.

In the medical world, drug users can be said to be "sick" so that they can be referred to as patients. Conditions that require pharmacotherapy in patients are therapy for intoxication/ overdose to eliminate drugs from the body and therapy for drug withdrawal symptoms or to prevent the development of increasingly severe symptoms so that patients can be comfortable in stopping the drug abuse.

Programs that are quite successful in carrying out these two methods are the Prevention Program, Combating Drug Abuse and Illicit Circulation or P4GN in Bahasa Indonesia. The P4GN was formed by the National Narcotics Agency in 2011 to eradicate drug trafficking while returning addicts to activities that involved people's lives. And most importantly, pharmacist candidates have a role in training on drugs containing narcotics, psychotropics, addictive substances and their effects.

For example, the training facilitated by BPOM as a briefing in knowing the legality of the drugs in circulation so that hoax information about drugs at pharmacies can be responded to wisely. If there are people who buy drugs with narcotics, pharmacists have a role in limiting access and reporting via the call centre to the BNN. Pharmacists are also in charge of educating

about drugs and checking the originality of the recipes because original and fake recipes are quite difficult to be distinguished between in this modern era. To ensure the authenticity of the prescription, pharmacists must confirm with the doctor as the prescription maker.

### **Do 21st-century pharmacists have the necessary tools to bridge the gap between substance abusers and treatment?**

Yes, pharmacists will have a link between drug users and the care provided. Along with the time, pharmacists who previously only took prescriptions, and dispensed drugs became a profession that was able to provide an understanding of the composition of drugs and drug dosages for patients based on disease and age due to the existence of "clinical pharmacy". Besides that, it is supported by technological developments that are able to make them able to meet face to face longer with patients than doctors through counselling so that patient care can be more intensive than before. Prohibited patient users can experience overdoses and discontinuation of the drug so that a suitable pharmacotherapy is needed. By giving it, the drug composition and dosage of drugs, especially drugs containing narcotics, psychotropic substances and addictive substances, can be targeted due to strict supervision by pharmacists based on their knowledge.

### **What strategies should be outlined to promote the rational use of drugs?**

The WHO (World Health Organization) has advocated 12 keys in promoting rational drug use, including the establishment of a multidisciplinary national body to coordinate drug use regulations, use of clinical guidelines, development, and use of national essential drug lists; establishment of regional and home drug and therapeutic committees including training on problem-based pharmacotherapy in undergraduate curricula; the continuation of medical education including services as requirements for licensing, supervision, audit and feedback; the use of independent information about drugs; public education about drugs; avoiding financial incentives without reason; the use of appropriate regulations and strengthened; and sufficient government expenditure to ensure the availability of medicines and staff.

### **Are pharmacists giving patients correct and rational advice on managing side effects and encouraging them to persevere with their medication?**

Of course. Pharmacists don't just refuse to check drugs that have arrived from distributors. Pharmacists also need to provide education on the pharmacology or management of drugs to doctors and nurses in terms of the right drug dosage and the dose-determining side effects; they will not provide drugs which are not within the therapeutic range. Drugs given outside of the therapeutic range cause drug resistance to attack microorganisms or drug abuse if the medicine contains a narcotic, psychotropic, and addictive substance.

Examples that occur in Indonesia are antibiotics. Today's antibiotics can be sold freely by a doctor. For instance, in the case of antibiotic

resistance in tuberculosis patients.

"WHO data in 2012 recorded 450, 000 patients with multidrug resistance tuberculosis (MDR Tb) who were newly identified in 92 countries," said the Chairperson of the National Pharmacy Committee (KFN), Drs. Purwadi, Apt. In fact, antibiotics sold without a prescription will cause an effect on the patient's body in counteracting bacteria that are not on target in the sense of causing antibiotic resistance. Therefore, antibiotics must be given according to the level of bacteria that attacks the patient's body.

This is where the importance of an explanation of side effects and the use of drugs which need to be spent and which do not need to be spent if the patient has recovered from the disease. The Chairperson of the Regional Management of the Indonesian Pharmacist Association (PD IAI) DIY, Wimbuh Dumadi, S.Si., Apt., seems to improve its role and increase its role together with the community and the community to provide informed consent.

### **How can the primary-care pharmacists support the early detection of substance abuse?**

Even though it is not easy to recognise it, someone with certain characteristics (high-risk groups) has greater potential than those who do not have the characteristics of a high-risk group. Pharmacists in primary care for substance users who are not familiar with the type and influence of drugs can support early detection through the patient's condition based on the influencing factors of substance abuse such as lack of religious knowledge, broken home families, children who smoke, lack of moral understanding, and always covering themselves from the environment. This is commonly detected in adolescence because of immaturity and still needs guidance from parents as the primary educator before the teacher is in the school.

### **What is the role of pharmacy education and training in the future of rehabilitation of substance abuse victims?**

According to KBBI (Kamus Besar Bahasa Indonesia in Bahasa), rehabilitation is recovery to the position (condition, good name) that was previously (originally); repairing disfigured limbs and so on individuals (e.g. hospital patients, disaster victims) in order to become human beings who are useful and have a place in society. Therefore, education and training are the roles of pharmacists in providing knowledge about the types of drugs, types, properties in the appropriate composition and the danger or side effects to the body if misused[11]. Examples of activities that can be carried out to provide education are seminars and workshops which are social rehabilitation in the Therapeutic Community Program. The activity was carried out to facilitate substance abusers in undergoing recovery and were able to deal with problems.

### **What types of board certifications or training programs are available after graduation for pharmacists to specialise in a rehabilitation program?**

Indonesia does not have a specialist pharmacist. Therefore, Indonesia only relies on a pharmacist's professional certificate for all fields through simultaneous testing. In other countries that have specialist pharmacists, especially in the field of rehabilitation, there is a pharmacotherapy certificate or called BCPS, which is a certificate that is carried out after the test that deals directly with

the patient's attention to medical research and drug information needed in the rehabilitation process.

### **Which are the most common substance use disorders and what novel insights are on the rise?**

The most common substance abuse disorder is an anxiety disorder. Anxiety is a type of psychiatric disorder. Based on the experience of the Psychosomatic Clinical Psychiatrist Omni Hospitals, Alam Sutera, Dr. Andre, SpKJ, FAPM, psychiatric disorders are divided into two, namely panic anxiety disorder and overall anxiety disorder.

Panic anxiety disorder occurs when patients experience severe panic due to fear of death. For example, patients who are afraid of being injected, take blood, palpitations, and sensations that cause the heart to pound strongly, tightly and quickly, shortness of breath, cold sweat, nausea and vomiting. However, the overall anxiety disorder is caused by an imbalance of the serotonin-dopamine system in the central nervous system because doses of substances (such as methamphetamine) that are not in accordance with prescriptions or drug abuse contain added heavy workloads and lack of physical activity to compensate.

The serotonin-dopamine system that changes the central nervous system arrangement results in sudden stimulation, especially in the cardiac circulatory system even though it has stopped consuming these substances because patients experience the discontinuation of the drug. The patient should be given a depressant drug that is able to normalise the central nervous system.

In Indonesia, prohibited substances causing anxiety are easily accessible to the public. Knowledge about drugs is not only about drugs directly in the form of capsules, powders, tablets, liquids, or other forms. But also drugs in the form of snacks and mixed results with small foods such as sweets, pastries, and wet cakes that are often purchased by children. Therefore, system imbalances in the brain do not only occur in adults too, even now it has spread to children.

To provide information about the dangers of new types of drugs, many parents in Indonesia provide news through social media to remind each other to be careful when buying food outside of school.

### **What are the most abused/misused medications for illnesses and what measures should be taken to prevent misuse and abuse?**

There are three types of drugs that are often misused to cure diseases, namely opioids which are prescribed as painkillers, depressants as tranquilisers for patients who experience anxiety and insomnia, and stimulants as a drug to overcome abnormalities cannot focus because of hyperactivity and obesity.

These three types of drugs are commonly used as remedies if used according to a doctor's prescription. Addiction to these drugs can be done in a form that has been modified by the patient, for example by mixing alcohol and other drugs simultaneously for consumption. In addition, the consumption of these drugs is widely misused, such as inhaled, injected in the form of liquid, chewing, which should only be consumed by swallowing so that the active ingredients of the drug can be slowly received by the body.

In addition, these drugs are used in high doses because of addiction, not to alleviate the disease suffered by the patient; this can aggravate



the situation such as overall anxiety with hallucinations, dizziness, nausea, numbness and stomach pain because stimulating the centre of pleasure in the brain becomes a strong desire for the drug. Finally, patients become more interested in abusing prescription drugs because many young people think that:

- Drugs used without prescription or copying from other recipes are not prohibited.
- Drugs that can be used by small children, meaning the drug is certainly safe.
- Drugs can be used easily because over-the-counter drugs can be used for old drugs at home or other people of the same type.

To prevent drug abuse, consult a doctor immediately if the drug is consumed by the patient according to the procedure, but suspect that the patient is addicted and symptoms that lead to addiction occur. Doctors already know how to solve these problems without ignoring the patient's health effects. So, the doctor will change the recipe or cancel it. In addition, if the doctor has prescribed medication for the patient, the patient must follow the instructions for using the appropriate dosage of the drug, do not receive medication from other people, do not give medication to other people, do not stop using the drug before the patient consults the development of the disease to the pharmacist beside the drug if mixed with other drugs or alcohol from the pharmacist directly, be careful with the effect of the drug if it has indicated the symptoms of addiction to the patient, and if ever misuse the drug can be consulted with the same doctor with the doctor before the patient is prescribed medication.

## Conclusion

Abuse of substances or drugs can be overcome if there is a pharmacist who handles the rehabilitation sector considering the large number of drug users or substance abusers so that communication in the form of informed consent is needed after prescribing medicines by doctors, consultation about the progress of the disease or symptoms felt by the patient concerned, and provide education on post-rehabilitation drugs to make substance abusers aware of 'ill'; not to abuse substances. When the P4GN program takes effect, pharmacists in the 21st century must contribute to education, especially regarding pharmacology and pharmacotherapy which are included in the field of clinical pharmacy and training in rehabilitating substance abusers. Beside that, pharmacists can deal with false news about drugs that are considered to contain drugs. By this way, Indonesia will produce healthy young people without being addicted to drugs or substances.

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# Role of Pharmacists in Uphill Battle Against Drug Abuse

by: author name missing



Drug abuse is a term commonly defined as the harmful use of any substances with the ability to alter mood, either stimulating or depressing. Substances can be varied up to drugs, alcohol as well with any substances with mood-altering properties. This issue has been constantly growing in Malaysia, with approximately half of the prison population incriminated with various drug abuse offences.

From day-to-day, drug abuse problems have never failed to be featured in the headlines of all modes of communication from news to social media to word of mouth. As the burden of drug abuse victims continues to increase, the Malaysia government has highlighted this problem as one of the prominent public health issues. [1]

Various programmes are implemented which include a change of strategy by the National Anti-Drug Agency (NADA). This strategy tends to focus more on an open-concept approach which allows convicted drug users to voluntarily approach healthcare professionals at local community centres for treatment purposes without any legal consequences. Now, the question is, what is the role of a pharmacist in tackling this issue?

Pharmacists are known as medication experts who have a thorough knowledge of the effective utilisation of drugs, and not to forget adverse effects when drugs are taken in unfitting manners. They are undoubtedly the front-line health care providers who are widely accessible in every corner of the streets. Moreover, pharmacists are involved in every aspect of managing medication, right from the drug formulation until the dispensing and counselling of medication to patients. They are also legally responsible for controlling and distributing medications across their practice settings to safeguard patient safety. With the expertise and experiences, pharmacists are ready to take part in the battle of drug abuse in the aspects of prevention, education, and support within a healthcare organisation. [2]

First and foremost, pharmacists as first-line of defence need to prevent a patient from becoming a drug abuser. In a community pharmacy setting, the pharmacist needs to be aware of the amount of product sold and the frequency of purchase by certain patients. This can be done through a computerised system of customer purchase record or facial recognition. Besides, a pharmacist needs to practice ethical dispensing practices to avoid any drug abuse behaviour. For example, opioid analgesics such as codeine-based medicine can be commonly found in cold and cold preparation. They are highly addictive and provide the user with an overall sense of calm and feelings of well-being leading to dependence on chronic use. This can be prevented when pharmacists give clear instructions on the direction of medication intake and adverse effects when taking in an ill-fitting way. In the case of suspected or identified misusers, the availability of misused products should be restricted by removing items from the open view of customers and refusing sales. Leaflets on the appropriate use of over-the-counter products may be helpful as well for a patient's better understanding. Furthermore, pharmacists can work together with the local jurisdictions to oppose drug abuse by engaging in local prescription drug monitoring programs, reporting any drug misuse incident and involving in public health activities where they can highlight the health consequences of abusing drugs in a long-term run. Secondly, as the number of drug-abuse cases increase annually, this is followed by the development of rehabilitation centres as well. At this moment, there are varieties of rehab centres available in Malaysia which range from exclusive private ones to 29 government inpatient centres run by the National Anti-Drug Agency. [3]

Pharmacists can play a role to provide help to people who are affected by the issue of drug abuse in terms of providing information and referring them to various support groups. For example, pharmacists can share their past experiences dealing with drug abusers and at the same time, counsel them about the long-term benefits of stopping drug abuse. Besides, mood-altering substances such as amphetamine-type stimulants and ketamine are generally being abused in Malaysia. Therefore, pharmacists can contribute by recommending the proper way of using the mood-altering substance to the public

including the healthcare professionals and drug users. Meanwhile, in the university setting, experienced pharmacists can be invited to share their expertise in drug abuse such as pharmacology of detoxifying medication to cultivate the development of undergraduate students for a better understanding of this problem. On the other hand, pharmacists are advocated to keep themselves updated with healthcare queries of drug abuse through continuing professional development (CPD) in Malaysia. [4]

In addition, pharmacists have well-known access to public settings and hence, they serve as the first line to detect any suspicious individuals who might be related to drug abuse. As pharmacists are an integral part of healthcare professionals, they should be aware of their limitations and refer the drug abuser to appropriate people for proper evaluation and treatment. Through the alliance with other healthcare providers, drug detoxification protocols can be improved for betterment in the future. As a treatment model continues to refine, an intensive program is introduced known as a matrix treatment model. This model aims to stop drug abuse, aid patients to stay on treatment, provide an understanding of health consequences, and support them to overcome difficulties in their daily routines through a counselling session. The problem of executing this model is the lack of professional counsellors, ideally with a requirement of the master's degree. Because of this, pharmacists are encouraged to enrol in the master's degree programme, specifically in drug counselling. [5]

In conclusion, the role of pharmacists is evolving beyond the procurement and supply of medicine. Opportunities are expanded to address either prescription or illicit drug abuse which has been a constant struggle in Malaysia. Pharmacists and other healthcare professionals need to pour more commitment to prevent, educate and spread awareness of drug abuse and safeguard the people from falling into an undesirable path.

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# Pharmacy Education: Its Role in the Rehabilitation of Substance Abuse Victims in Nigeria

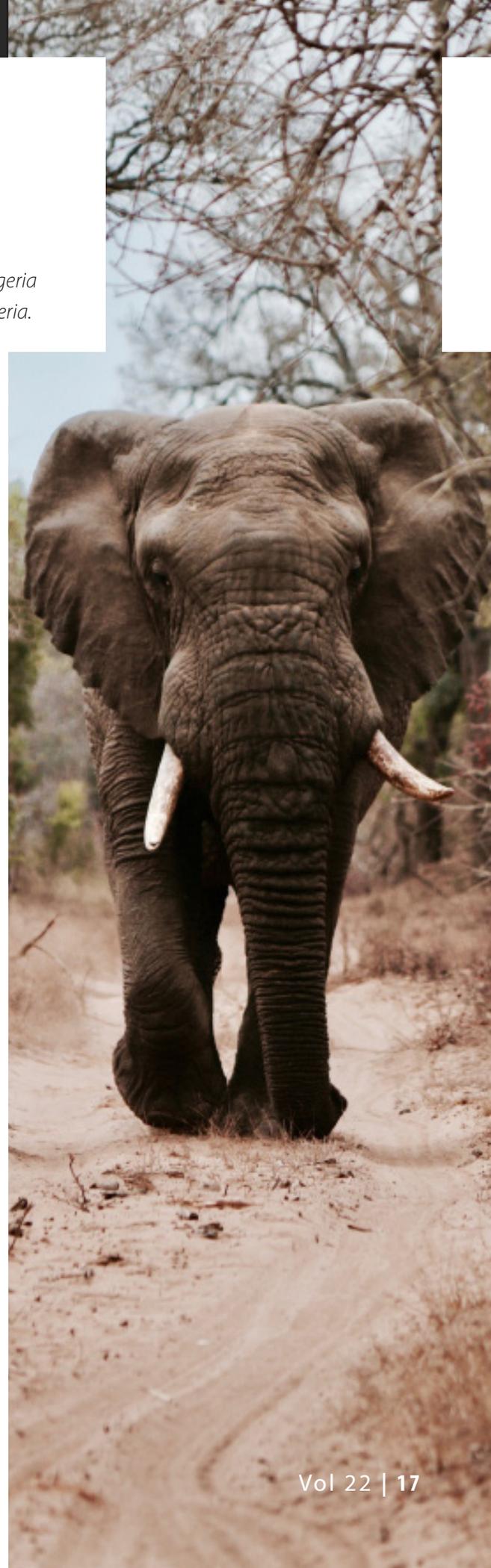
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## Abstract

What is known about substance abuse in Nigeria is as a result of research with little or no financial support, and from a public outcry through the mass media about “deviant behaviour” of adolescents because of substance abuse. Although these reports all seem to agree on the classes of substances abused, the changing patterns in their uses and other epidemiological data, the lack of a uniform reporting system and a poor display of professionalism by pharmacists have tended to mask the increasing danger posed by substance use dependence and addiction. The last four decades have witnessed developmental changes in pharmacy education in Nigeria. The paradigm change in the role of the pharmacist from a product-oriented to patient-oriented focus requires that the overall education of pharmacists be reorganised to meet the increasing challenges in the present-day society. Pharmacists must understand substance use at least as well as they understand other diseases. This study gives an overview of the condition of substance abuse in Nigeria. It reveals the progress in the rehabilitation and treatment of people with substance use disorders as well as the role of pharmacists in this regard. This study also explores the relationship between pharmacy education, perceived and actual knowledge, and professional interactions as it pertains to problems surrounding substance abuse in the region.

## Introduction

There is no universal agreement on the definition of the term “Substance abuse”. For example, the WHO defined it as the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs . Other authors have defined it as the unspecified use of a drug other than for legitimate purposes. Using this latter definition, substances reported to have been abused in Nigeria include, among others, antibiotics, antidiarrheals, laxatives and pain-relieving drugs. Given the ongoing public attention paid to the problems of substance abuse in the Nigerian society, it is somewhat disappointing that few pharmacists are educated and trained in this area of clinical care. [1] Pharmacists are front-line health care providers and arguably are the most accessible members of a healthcare team. They are expected to play a multitude of roles such as custodian of the country’s legitimate supply of drugs, provider of drug information, and drug educator. Yet, very few pharmacists are adequately informed or prepared to assume these diverse functions as they relate to issues of substance use and abuse. [2] It is estimated that the average annual retail cost of psychotropic substances in Nigeria is more than USD 15,000, while alcoholic beverages, aside from spirit, generate more than USD 30,000 from sales to a consumer population of about 30 to 35 million people. Previous studies have pointed to the alarming incidence of substance abuse among secondary school students as a contributory factor in the ugly confrontation between school administrators and students; parental use of substances has been implicated as a risk factor for substance use by secondary school students. [3]





## Method

This study assessed the available evidence on issues relating to substance abuse and the challenges facing its rehabilitation in Nigeria. The review is qualitative-based. Search for relevant medical literature in biomedical databases was conducted such as PUBMED and Google scholars with the following key terms: Role, Pharmacy, Education, Rehabilitation, Substance, Abuse and Nigeria.

In addition to this, data were obtained from WHO 2017 Substance Abuse Report and United Nations Office for Drug and Crime 2018 Report. Paper selections were conducted by reviewing their abstracts as well as their titles; in addition, using supplemental references gotten from the reference lists of the papers. No date restriction on the search for literature.

## Discussion

The purpose of this study was to investigate the role of pharmacists in the rehabilitation of people with substance use disorders in Nigeria via pharmacy education. Studies revealed that the majority of the subjects were occasional drug users and were from student populations. Obviously, survey data provided a different type of information from clinical data, which focused only on a highly selected population. It appears, however, that the trend in substance abuse is shifting from single-substance use to the use of two or more substances in combination. Reports from various articles suggested that alcohol is used more frequently than any other drug, and is combined with other substances to enhance the euphoric effect of the substance.

The study established that a significant number of students had a positive perception of drug abuse whereas a far greater number of students had a negative perception of drugs and substance abuse. This suggests that the majority of the students were aware of the dangers of substance abuse. From the findings, it was revealed that this population has several reasons for the use of substances which includes; relief from stress, which was the most significant reason for the use of substances. This was followed by self-medication to treat illnesses and then a relatively low number who abuse substances to stay awake at night in order to study. For most of the substances, there were more male users than females, but the gender differences were small and statistically insignificant. It was also revealed that only 16% of pharmacists in Nigeria have received any training recently about substance disorders, although 97% have good knowledge of substance abuse as a social problem. 86% indicated that they can identify signs of substance abuse in addicted persons, but only 46% are familiar with counselling techniques for persons addicted, while 24% are familiar with treatment protocols for substance abuse disorders. In Nigeria, there are no funds made available for research and rehabilitation to provide treatment for substance abuse victims. According to a WHO report, a lack of public awareness in this area thwarts the prevention effort. Due to problems of funding and dearth of potential research, Nigeria is not making progress in formulating critical policies to take care of substance abuse victims. Substance abuse is associated with tremendous costs for society and there is a need for pharmacists to develop effective treatment and prevention strategies. The

pharmacist's primary responsibilities in the rehabilitation of this population include provision of pharmaceutical services to meet the medical needs of people with substance use disorders in various health settings; development of sustainable protocols for management of withdrawal from drugs of abuse; education of victims and the public in general, particularly in areas where the prevalence of substance abuse is significantly high; enlightening pharmacy students about the pathophysiology of addiction, treatment options, and the foundations of recovery; medication and addiction counseling; and multidisciplinary team support of recovery. To successfully fulfil this complex role, the pharmacist must have specialised education on addiction, develop good communication skills, and learn the dynamics of recovery support groups.

## Conclusion

Although the fight against substance abuse in Nigeria is at its peak, the number of substance abuse victims has experienced a dramatic increase over the years. It is evident globally that the war on drugs is never successful and it is even a threat to public health. This made it pertinent to ensure and promote an honest discussion about drugs, in which the roles of pharmacists cannot be overemphasised. Numerous approaches have been taken by stakeholders and key players in the health sector to curb the threat, but its rise amongst the youths cannot be overemphasised. To deal with the problem at its core, victims of substance use disorders need to undergo behavioural therapy that delves into counselling and pharmacy education. Therefore, it is crucial that enlightenment programs, sensitisation campaigns and rehabilitation counselling be made available at all levels. This can be achieved, however, when pharmacists develop interventions to address this problem. There is a lack of available literature on the importance of pharmacy education in the rehabilitation of substance abuse victims in Nigeria. Stronger studies are needed to establish that rehabilitation interventions should be broadly implemented in substance abuse. [4]

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# Education and Empathy: The APhA Institute of Substance Use Disorders

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## Background

Substance use disorders (SUDs) have played a prevalent role in society and have been associated with a stigma throughout history. While we know now that SUD is a multifaceted chronic brain disorder that is a treatable condition, those who struggle with SUDs are often blamed and marginalised in society. [1] For example, the first Diagnostic and Statistical Manual of Mental Disorders (DSM-I) associated substance dependence with an underlying personality disorder. [2] It was not until the DSM-III-R published in 1987 that the behavioural effects of substance use disorders were attached to physiological mechanisms. While science demonstrates that SUDs are a brain disorder and not the fault of people who struggle with SUDs, public opinion and terminology such as “drug abusers” propagate the notion that those with SUDs are somehow morally at fault. This stigma contributes to patients’ hesitancy to seek treatment and to health care professional’s negative perception of patients with SUDs.

Two of the substances most commonly associated with SUDs in the United States are alcohol and opioids. The National Survey on Drug Use and Health (NSDUH) revealed that 6.2% (15.1 million) of American adults over the age of 18 had an alcohol use disorder (AUD). [3] Of those who had AUD, only 6.7% received any treatment in the last year. [3] Furthermore, alcohol-related deaths were the third leading cause of preventable death in the United States and contributed to 5.9% of deaths globally (3.3 million) in 2012. [3] Besides alcohol, opioid use disorders are prevalent in the United States. In 2017, an average of 130 people died from an opioid overdose every day, which comprised about 68% of the 70,200 drug overdose deaths. [4] Despite new regulations and health care provider education, these numbers have progressively increased since 2002. [5]

## The Pharmacists’ Role in Substance Use Disorders Innovative Roles for Pharmacists in Substance Use Disorders

In the United States, clinical pharmacists have many opportunities to aid patients struggling with SUDs. First, pharmacists in hospitals can influence provider prescribing and encourage fewer opioid prescriptions to treat mild acute pain. Additionally, pharmacists have partnered with physicians and other health care providers to care for patients at SUD treatment centres and clinics. While one could cover these medications in more depth outside the scope of this paper, commonly used medications managed by pharmacists in clinics to treat patients with SUDs are methadone, naltrexone, and buprenorphine. [6] Methadone is an opioid receptor agonist given once per day that inhibits or decreases the euphoric effects of opioids and reduces withdrawal and craving. [6] According to the Substance Abuse and Mental Health Service Administration, there are approximately 1500 federally certified opioid treatment programs that offer methadone as of February 2018. [6] One limitation to methadone as a treatment for opioid use disorder is that it often requires patients to visit the clinic daily for





the medication. On the other hand, buprenorphine is an opioid receptor partial agonist that can be given less frequently via subcutaneous injection or subdermal implants if the patients are stable. [6] This method may help increase adherence to

treatment. Besides methadone and buprenorphine, naltrexone is an opioid receptor antagonist that blocks the euphoric effects of opioids and causes no opioid effects. [6] Even though these three drugs have three separate mechanisms of action, there are no current studies that recommend one treatment over others. [6]

A pilot program involving a pharmacist and physician for patients taking buprenorphine and naloxone (Suboxone) for SUDs demonstrated the impact pharmacist and physician collaboration could have on patients struggling with SUDs. [7] In this pilot program, the pharmacist performed the intake assessment and follow up appointments with twelve patients, documented the interactions, and discussed the patients with the physician, who reviewed and cosigned the patients' medical records. [7] This pilot program retained all of its patients after six months with a 91% appointment attendance rate; of the urine toxicology tests performed, 98% (127) were positive for buprenorphine and 88% (114) were both positive for buprenorphine and negative for opioids. [7] These results, along with results from other pilot programs and clinics, indicate that pharmacists can play a vital role in treating patients with SUDs in an outpatient clinic setting. While the data looks promising, some limitations for these clinics include access to care in rural areas of the United States, affordability for patients, and lack of patient knowledge about available treatment. [8] All in all, working in a clinic for patients with substance use disorders is only one of the ways that ambulatory care and clinical pharmacists can impact patients' lives and aid those who have a substance use disorder.

## Community Pharmacists' Role in Substance Use Disorders

Pharmacists in the community are uniquely trained to help patients who struggle with substance use disorders. They are trained to recognize opioid withdrawal symptoms and opioid overdose. Furthermore, while physicians may only see their patients once or twice a year, pharmacists often see patients at least once per month. They can educate patients about substance use disorders and recommend safe opioid storage and disposal when no longer needed for acute pain. Thus, community pharmacists can play a key role in identifying patients who may be at risk for substance use disorders and can aid in looking for signs and symptoms of SUDs that physicians may not notice at their appointments.

To combat the problem of opioid misuse, community pharmacists in Oklahoma are required by law to check the Oklahoma Prescription Monitoring Program (PMP or PDMP) before dispensing opioids to a patient for the first prescription and at every 180 days thereafter.[9] Pharmacies and dispensing practitioners submit information regarding the prescribing and dispensing of scheduled medication in the prescription drug monitoring program (PDMP or PMP) for each patient on a scheduled medication.[10] This allows law enforcement agencies, pharmacies, relevant health practitioners, and regulatory boards to view how often a scheduled medication was prescribed and dispensed to a patient in a given time frame.[10] Each state in the US except one operates their own PMP but there is collaboration between some states so that pharmacies in one state can view the PMP in another state if necessary. There are also limits on how many days' supply a pharmacist can dispense for acute pain and policies about giving opioids for chronic pain.[11]

Even though performing the proper duties of a pharmacist and checking the PMP may prevent one from obtaining opioids that are not prescribed for a valid

treatment, these methods do not actually help treat patients who suffer from substance use disorders (SUDs). Pharmacists need to be trained to know how to talk with patients about opioid misuse and other substance disorders, what resources are available for those struggling with SUDs in their communities, and how to provide care in both an empathetic and educational manner. Pharmacists who are knowledgeable about SUDs and trained in how to talk to patients about them can help combat SUDs in a unique and impactful way.

## Current SUD Education in American Pharmacy Curriculum

As a pharmacy student, I have learned extensively in classes about the chemical structures of opioids and counseling points to tell patients who are taking opioids, but I have not learned how to approach patients who may have SUDs and what treatment options are available for them. I have practiced empathy and medication counseling in labs, but I have not had practice in how to apply this training to patients with suspected substance use disorders. After my first year of pharmacy school, I did not feel confident to engage in conversations about the opioid epidemic, even though this is a major topic and current affairs issue.

Educating pharmacy students is crucial in combating substance use disorders and providing patients with effective and compassionate care. Pharmacists are one of the most accessible health-care providers, and they can provide information and assist patients who suffer from SUDs. Although the number of pharmacy schools across the US that educate about SUDs has increased, the average time spent learning about SUDs in pharmacy school is 2.7 hours.[12] This is under the four hours of training recommended by the American Association of Colleges of Pharmacy (AACCP). [12] There is also a gap between the scientific study of SUDs and the hands-on experience of treating patients with SUDs.[12] This results in pharmacy students being ill-equipped and unconfident in talking to patients about SUDs.

Furthermore, studies of health professionals' attitudes towards patients with SUDs reveal that the majority of healthcare providers have negative opinions of these patients.[4] A survey taken by 111 pharmacists and published in the *Mental Health Clinician* revealed that one-third of the pharmacists who participated in the survey stated that they were "annoyed" rather than "sympathetic" when they interacted with patients who have SUDs.[13] This survey also divulged that only seventeen percent of the pharmacists who participated felt confident in their ability to care for patients with SUDs.[13] Additionally, only nine percent of the pharmacists surveyed believe that they had received adequate education regarding substance use disorders while in pharmacy school.[13] Pharmacists who hold negative perceptions about SUDs may be less inclined to assist patients with SUDs, which could result in suboptimal care.[14] Therefore, it is critical to educate pharmacists and pharmacy students about the science of SUDs and combat stigma through knowledge to improve patient care. The APhA Institute on Substance Use Disorders Besides didactic training, one way to educate pharmacy students and pharmacists about

SUDs is through conferences such as the American Pharmacist Association (APhA) Institute on Substance Use Disorders (formerly titled the Utah Institute and the APhA Institute on Alcoholism and Substance Use Disorders) in Salt Lake City, Utah. The goal of this conference is to introduce topics about substance use disorders and to assist pharmacy students and pharmacists who struggle with SUDs in their treatment.[15] This conference teaches pharmacists and pharmacy students from around the United States about substance use disorders and how to care for patients and friends and family members who have them. Last summer, I had the opportunity to experience this annual, four-day conference, and it completely changed my understanding about substance use disorders and the patients who struggle with them.

The APhA Institute on Substance Use Disorders pairs objective understanding of SUDs and treatment with subjective personal stories about the effects of SUDs. Morning sessions included lectures about the neurology of substance use disorders, medical and recreational marijuana use, and how pharmacists from around the country are caring for patients who have SUDs. We also learned common symptoms of SUDs to look for in patients, how to use naloxone, and how to have conversations about opioid use disorders with our patients. Lastly, we brainstormed ways in which we could apply our newfound knowledge to our own communities across the United States. Mixing the scientific information about opioids with practical tools to aid patients with SUDs built my confidence in caring for my patients that I see on rotations.

Coupling this pharmaceutical training with the personal stories of people affected by SUDs made for a moving experience that has a continued impact on my pharmacy career. Evenings at the APhA Institute involved participating in Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and Al-Anon meetings. During some of these meetings, pharmacists and student pharmacists shared their stories of their battles against dependence on alcohol or opioid medications. These meetings were extremely emotional and therapeutic as we collectively grieved for family and friends who struggle on a daily basis with their substance use disorders and celebrated those who are in recovery. Hearing the human aspect behind the statistics of opioid and alcohol-related deaths increased my empathy for those who struggle with SUDs and made me a better pharmacy intern for my patients. The most effective healthcare professionals are often the ones who genuinely care for their patients, and I credit this conference for shaping my perspectives on the substance use disorders and developing more understanding and empathy for those who are victims of it. Without the APhA Institute to educate me and expose me to the realities of SUDs, I would still feel ill-equipped to talk with patients about SUDs and might be more biased against my patients who have SUDs.

## Concluding Remarks

Altogether, substance use disorders – whether it be alcohol, opioids, or other substances – negatively affect the lives of millions in the United States and around the world. Pharmacists have the



ability to play a unique role to combat the stigma of SUDs and care for patients who have them. Therefore, efforts to increase the educational training in pharmacy schools of student pharmacists regarding substance use disorders is crucial to developing competent pharmacists that can empathically and effectively care for their patients. While opioids may not be the focus of SUDs in other areas of the world, conferences about substance use disorders can be beneficial for any pharmacist or student pharmacist since they can provide education that may be lacking in formal training. These conferences help bridge the gap between learning the objective facts of SUDs and understanding and empathising with the patients who have them. In conclusion, the principles of the APhA Institute on Substance Use Disorders can be extrapolated to educate pharmacists and student pharmacists and to benefit patients around the world.

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# Curbing Substance Abuse in Nigeria: The Changing Role of Pharmacists

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## Abstract

Substance Abuse is an alarming public health problem in Nigeria and Globally. Pharmacists have a key role in addressing substance abuse. This paper highlighted the prevalence, effect, risk factors of substance abuse in Nigeria. Based on the findings, recommendations were made on how to reduce or totally curb substance abuse through various roles pharmacists can play effectively.

## Introduction

Pharmacists have a key role to play in curbing the menace of substance abuse in Nigeria. Nigeria is the most populous African nation in the World. Nigeria has an estimated population of 190,886,331 million people, expected to rise to over 200 million by the year 2025[1]. It has a predominantly young population. The number of drug-related deaths globally among youth was 211,000 in 2011 [2].

Degree awarding in Pharmacy starts at Obafemi Awolowo University to the Western region and Ahmadu Bello University, Zaria to the Northern region. Subsequently, transformation in the Pharmacy education shows acceptance of a Doctor of Pharmacy (Pharm.D) degree as the future minimum qualification for registration as pharmacist in Nigeria was its inclusion in the benchmark. [3]

Today, the study duration prescribed in the curriculum for the Pharm.D is 6 years through UME. At the moment, only University of Benin and Bayero University Kano that is offering Pharm.D in the country.

Pharmacy profession and education is regulated and controlled through the Pharmacists Council of Nigeria (PCN) and covers all aspects of educating, training, licensing and practicing of all Pharmacist, Pharmacy Technicians and proprietary patent medicines vendors (PPMV) in Nigeria. [4]

Pharmacy profession is changing focus and the future lies in its ability to contribute to the rational use of medication in health care [5] best through patient education and monitoring. Recent studies show that, apart from physicians who prescribe medicines, pharmacists, other pharmacy staff in retail pharmacies are key important stakeholders that play a crucial role in prevention of Substance abuse who are mostly involved in the dispensing of medicines, and licensed proprietary patent medicines vendors (PPMV) [6].

## Background and Prevalence of Substance Abuse

Substance abuse is a public health problem and the prevalence in Nigeria and other parts of

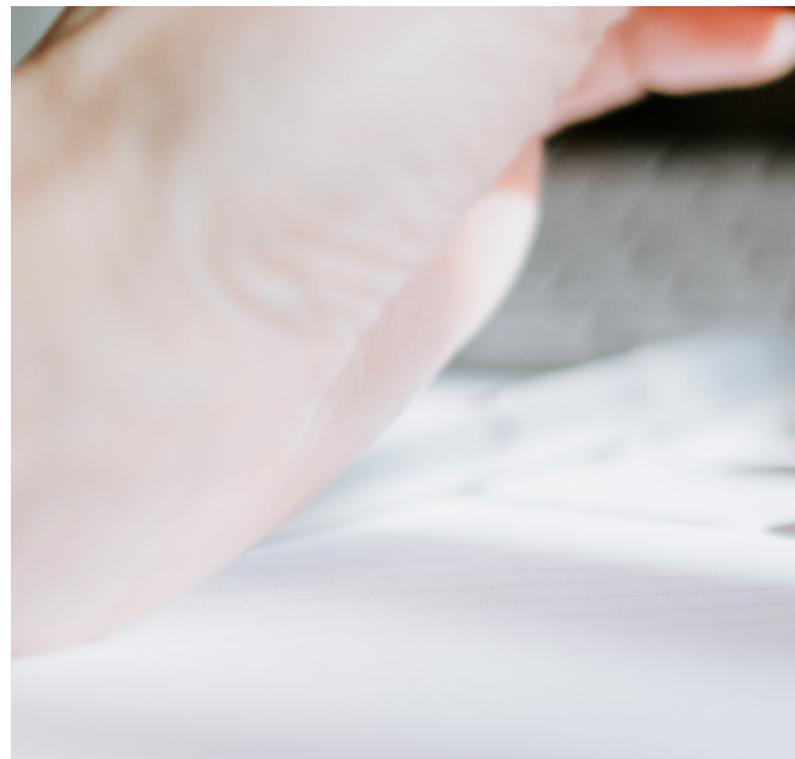
the world is so alarming. It is globally prevalent affecting people of all ages, race and sex. The increase in prevalence of substance abuse in Nigeria has caused dramatic changes with an accelerated increase in crime, morbidity and mortality, unemployment and underemployment, decline in socio-economic and public safety.

To this end, homes are broken, dreams are shattered, and potential manpower is wasted as drug abusers struggle to sustain their habits and they become burdens to themselves, families, the society, and the state at large [7].

## Effects of Substance Abuse in Nigeria

The severe potential long time effect of substance abuse is so alarming. Drug abuse is of particular concern among mainly youths globally who are the leaders of tomorrow. Injecting drugs is a source of potential exposure to different health conditions, such as HIV, hepatitis B and C, and lung cancer [2].

The socioeconomic effects of drug abuse have led to a huge burden placed on government and the overall society. Mainly the economic effect is often cited through a loss of potential manpower, low productivity, and creation of an unfavorable environment for investors which affects the Gross National Income (GNI) and a series of social effect which varies at issues dealing with increasing criminal



activities associated with drug abuse like robbery, burglary, rape, vandalism of public properties, increasing rate of HIV/AIDS, the congestion of penitentiaries where the government spends more in the maintenance of prisoners, and of course the growing numbers of destitute which our social welfare administration system cannot carter for thereby depleting government's budget [7].

### **Risk factors Influencing Substance Abuse**

So many trends have led to a tremendous increase in drug abuse, they are:

#### **Peer Pressure:**

Peer pressure is a predisposition factor to drug abuse in Nigeria. Drug taking is becoming normal in social gathering, common and acceptable among friends in our society.

#### **Age:**

Age is another risk factor for drug abuse. The prevalence of substance abuse is greater among youth globally.

#### **Poverty:**

Poverty remains one of the contributory factors of substance abuse in Nigeria. Nigeria is a nation with so much wealth, yet there is high visibility of rising poverty. About 76% of the population lives on \$1.90 a day or less and the poverty gap at national poverty lines is 17% [8]. There have been in less interest of health care practitioners to practice in rural areas which have led to poor education on substance abuse, poor enforcement on regulations against quackery and PPMVs.

#### **Affordability and Availability of medicine:**

In Nigeria, the sale of prescription-only medicines (POMs), Over-The-Counter (OTC) is unlawful [9]. In reality any end-user can

purchase and sell any POM or OTC through different channels. The Essential Drugs Programme was initiated in 1988, and it developed the first National Essential Drug List (EDL) for the country that same year.[4]

## **Recommendations**

### **I. Capacity Building:**

Pharmacists must be made to mandatorily undergo regular training on substance abuse. PCN conducts continuing education programmes. But, there should be increased notable collaborations with local and international organisations offering opportunities for pharmacist training, funding, and research activities. Also, there should be involvement of pharmacists in relevant annual conferences, retreats, workshops, seminars, public lectures round table discussions, committees and meetings involving substance abuse.

### **II. Public Education:**

There is a need to create extensive high level advocacy, creating awareness and public education required among health care providers and the general public on rational use of medicines and substance abuse by pharmacists.

### **III. Workforce Planning:**

As the role of pharmacists becomes clearer, increasing capacity and number of schools in producing pharmacists is crucial. Nigeria is facing a great shortage of pharmacists due to the emigration of Pharmacists to nations with more developed health care systems. Also, studies showed that Nigeria has only 21,892 registered pharmacists with only 59% in active professional practice [10]. The 'brain drain' remains the greatest threat to the profession due to lack of resources for training, adequate play ground for pharmacist continuing education, undefined roles of staffing, recruitment and





retention instructions in national preparedness and response to public health emergencies and surveillance networks.

#### IV. Media:

Media have contributed massively to awareness campaigns actively. It is important to note that information can be easily disseminated to everyone either in rural or urban through text messages, radio programmes, town hall meetings. In so many parts of the world, Media has become a phenomenon that has created opportunities to raise issues at stake to the public. Media should be utilised by Pharmacists to interact with them, know the direction of policies and effects of substance abuse.

#### V. Technology:

Introduction of track and trace technology in the drug distribution system will play a vital role in tracking the number of products, practitioners and premises, enforcement, the drug distribution system. Technology will make it basic for regulators to effectively regulate and control the pharmaceutical sector.

#### VI. Early Intervention programmes:

Pharmacists have a key role to play in society through detecting addicts in their early stage. They also can report addicts to relevant rehabilitation and enforcement agencies at an early stage which makes it easier.

#### VII. Counseling Centers:

Counseling centers should be established in every hospital and community through a team of a Pharmacist, Physiologist, Sociologist either by the government or private individuals to counsel them on how to withdraw or drug abuse education on certain medication to overcome their problem.

#### VII. Comprehensive Policy on drugs Control:

It's so traumatic to see how Nigerians have access to drugs despite government's regulation. The National Agency for Food and Drug Administration and Control (NAFDAC) and PCN are the two main government institutions responsible for regulating different aspects of the pharmaceutical supply chain in Nigeria. New national policies on drug control need to be implemented and agencies are pushed to regulate policies related to drug substance. Prescription monitoring is poorly conducted and prescription only medicines (POM) are routinely sold Over-The-Counter (OTC) in pharmacies and by patent proprietary medicines vendors (PPMVs). The National Policy on Quality Assurance for Medicines and other Health Products (NQAP) needs to improve upon. The goal of the policy is to secure the supply chain thus hindering the free flow of falsified or substandard medicines and other health products. [11]

#### X. Research:

Further development of research capacity is likely to play an important role in the growth and sustainability of curbing drug abuse in Nigeria. Information on actual medicine consumption in Nigeria is hard to obtain. The Public, private and International organisations need to initiate more research to a more recent survey on prevalence of substance abuse and to provide up-to- date data on drug utilisation.

#### XI. Substance Education Curricula:

A curriculum innovation in schools is cost effective. Professional regulatory Council, University Senate and Nigeria University Commission (NUC) are responsible for systematically planning courses. There is a need to review the current curricula for inclusion of Drug/Substance in view of the rising threat of drug abuse in undergraduates courses taught by qualified pharmacists on substance abuse. This will help in learning ways of preventing substance abuse and reducing its adverse consequences which have shown success in so many countries.



## XII. Improved Procurement and Distribution:

Distribution and procurement of medicines in Nigeria is dramatic and involves many different bodies, organisations and stakeholders. Some major manufacturers' contract private logistics organisations to distribute their medicines and some international development partners use the services of courier companies to deliver medicines to benefitting outlets [12]. There should be urgent interventions that only trained Pharmacists are actively involved in supplying pharmaceuticals as outlined by the Drug distribution system thereby promoting rational drug use.

## Conclusion

Pharmacists have a key role to play in the fate of our national condition. The Pharmacist must engage in his creative enterprise as a duty and responsibility with all honesty and commitment to save the images of ourselves and the society through the total support of the citizens, government, corporate bodies to have a new national resolve. Thus, the government must (together with pharmacists in particular and the society in general) begin to orient our mentality on drugs. Each of these drugs has its uses and relevance and each is crucial.

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# Combating Substance Abuse, One Dragon at a Time...

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## The Gatekeepers

Pharmacists are seen as the gatekeepers of castles; the selected individuals who guard the public from outside forces and work directly with additional healthcare officials to promote safe and effective care. As a team of protectors, pharmacists are trained to aid substance abuse issues and provide proper treatment. Is this training enough though? Dragons, raiders, and intruders have managed to break down barricades, storm castles, and combat for the power over controlled substances. Ultimately, the right tools are there, yet still problems arise for the land. We, the gatekeepers, need to strengthen our own tools to work to bridge any disparities and gaps, specifically in the realm of substance abuse.

Learning from our past and what the data shows is a great first step to then create a plan of action. According to the 2017 National Survey on Drug Use and Health, approximately 19.7 million people aged 12 or older had a substance use disorder (SUD) related to their use of alcohol or illicit drugs in the past year, including 14.5 million people who had an alcohol use disorder and 7.5 million people who had an illicit drug use disorder.[1] A staggering statistics, such as this, begs the question, "How is this possible?" and "Why is this possible?"

## The Bridge's Main Crack

Communication among the healthcare team, regardless of setting, is lacking an ideal exchange of information, checks, and balances. Additionally, communication between healthcare professionals, such as pharmacists, and individuals suffering from substance abuse is significantly disconnected. Both miscommunications need to be repaired and proactively addressed to ensure the gap between substance abusers and treatment is nonexistent. In a clinical or community setting, pharmacists have the ability to use their spheres of influence to tackle issues of substance abuse head on and with full force.

A 2018 study published in JMIR Human Factors concluded the following, "Until pharmacists can see the reason for which a medication is prescribed and physicians gain insight into adherence, neither group will be fully able to work together to make medication-related decisions collaboratively. The major barriers to collaboration include poor communication systems with minimal inter institutional information exchange, and even when an Electronic Health System (EHR) exists, competing decision-making processes are most often present." [2]

Establishing significance is essential for buzzwords and common phrases in healthcare practice such as, "individualised care" and "patient-centered care" to be more than just words, but real in practice and in action. The difficulties faced in discussing sensitive topics, such as substance abuse, with patients' needs to be proactively taught. A 2015 study published in Research in Social and Administrative Pharmacy concluded, "Despite the perceived importance of engaging in Prescription Drug

Abuse (PDA) communication, healthcare professionals (HCPs) reported that prescription drug abuse communication is uncomfortable, variable, multifactorial, and often avoided." [3] Similar research and analyses provide insights that healthcare professionals need tailored communication skills to properly address and engage in these sensitive, difficult conversations.

Pharmacy school curriculums should include courses specifically tailored to communication, empathy, and navigating difficult situations that a pharmacist will be placed in, regardless of setting. As an individual in the first cohort of the new team-based learning curriculum at the University of Florida College of Pharmacy, the college seamlessly incorporates specific core classes, exercises, and milestones to teach and assess "soft" skills - such as leadership, communication, and teamwork. Specifically, the Professional Skills Lab courses present within the didactic semesters of the program highlight course objectives and deliverables including, "Demonstrate altruism, integrity, trustworthiness, flexibility, and respect in all interactions...Display preparation, initiative, and accountability consistent with a commitment to excellence...Deliver patient-centered care in a manner that is legal, ethical, and compassionate. [4] Continuing Education can help to refine and maintain these "soft" skill sets that are becoming more and more important every day. Our patients need to be able to trust us. Effective communication works to build that bridge of trust and minimise any gaps between substance abusers and treatment.

## Dragon One: Opioid Replacement with Suboxone

Suboxone (Buprenorphine/Naloxone), indicated for opioid dependence, has gained popularity over the years as this prescription medication works to prevent withdrawal symptoms associated with an opioid addiction. Suboxone's significant popularity could have infamously transformed the medication from a miracle treatment relief to "The New Drug Epidemic". The National Pain Report states, "The main issue...is that people who want to keep up their addictions will use Suboxone to ease the withdrawal symptoms that occur between periods of abuse, making it easier to take breaks between highs without the physical consequences associated with withdrawal." [5] A 2013 article from the same medium echoed the concern in stating, "Last year patients filled about 9 million prescriptions for Suboxone or buprenorphine products, many perhaps not realising they were taking another opioid to treat their opioid addiction." [6]

Stacy Seikel, Medical Director of RiverMend Health Centers published a 2016 article detailing the difficulties of tapering off Suboxone. Seikel states, "Tapering off Suboxone takes time, typically six to twelve months...The entire process of a safe taper in a medically managed environment can of course be challenging, but it can also be incredibly rewarding as patients work toward their ultimate recovery goal." [7] The healthcare team needs to be consistent, communicative, and



collaborative to successfully taper Suboxone, keeping in mind that an unsuccessful taper can drive a patient into relapse. As the drug experts, pharmacists need to be keen and vigilant to spread awareness on topics such as these through in-service education and workshops to the healthcare professionals within their respective institutions.

Furthermore, pharmacists need to explore all therapeutic options and alternatives when working with substance abuse patients and their loved ones. Also, this exploration begins with asking the right questions and utilising proper counseling techniques. Open-ended questions will allow pharmacists to empathise and build rapport with patients while simultaneously obtaining pertinent information for future decision making. To address the crux of this substance abuse issue, pharmacists need to self-reflect on their coursework, tools, and practices. The Five Rights: the right patient, the right drug, the right time, the right dose, and the right route is crucial to ensure safe, effective care is optimised with a prescription of Suboxone. This proactive process will help to mitigate any future risks as the healthcare team works for every patient through an individualised approach. Options for treatment could include, psychotherapy, naloxone, naltrexone, methadone, added nonpharmacological approaches, etc.; the more important fact is that pharmacists should use all the tools at their discretion for addressing issues, not simply the one most frequently used or one that comes to mind first.

## Dragon Two: Marijuana

Another dragon that has gained momentum in recent years by constantly knocking on the castle gate is marijuana. Marijuana can be recognised as a potential gateway drug, similar to alcohol. The National Institute on Drug Abuse reported, “a study using longitudinal data from the National Epidemiological Study of Alcohol Use and Related Disorders found that adults who reported marijuana use during the first wave of the survey were more likely than adults who did not use marijuana to develop an alcohol use disorder within 3 years.” [8] However, all research in this space does not definitively hammer an answer to “Is Marijuana a Gateway Drug?”, but it is

worth being discussed as such—given that 2016 had “2.6 million new users of cannabis in the United States.” [9]

Robert L. DuPont, President of the Institute for Behavior and Health, published a 2018 New York Times article titled, “Marijuana Has Proven to Be a Gateway Drug”. DuPont comments, “Marijuana use is positively correlated with alcohol use and cigarette use, as well as illegal drugs like cocaine and methamphetamine... People who are addicted to marijuana are three times more likely to be addicted to heroin.” [10] With talks of legalisation and marijuana’s use (or misuse) for medical purposes, pharmacists need to provide up-to-date knowledge to both patients and the entire healthcare team. Discussions on the benefits, pitfalls, and potential consequences on potential legalisation of the drug is essential and subsequently is a pharmacist’s job to initiate these sometimes-controversial topics. Again, similar rapport building and communication is crucial between patients and pharmacists to understand the full picture of an individual’s health and what is appropriate for them. With its increased prevalence in younger generations today, pharmacists need to be at the forefront before this dragon becomes almost uncontrollable.

## Dragon Three: Adderall

The last dragon discussed, Adderall, has additionally gained specific power within the millennial population. Adderall (Amphetamine; Dextroamphetamine), most commonly known for treatment of attention-deficit hyperactivity disorder and less commonly for treatment of narcolepsy, is classified as a Schedule II Controlled Substance. A 2016 study published by the Johns Hopkins School of Public Health determined, “...adults, over the six-year study period, treatment visits involving Adderall were unchanged, while non-medical use of Adderall (that is, taking the drug without it being prescribed) rose 67 percent and emergency room visits went up 156 percent.” [11] Similar research indicates the need to educate and inform the public, specifically college students, on the long term implications and detriments that could be associated with this medication if taken inappropriately.

Adderall has also gained increased media coverage on its

classification of a “study drug.” A 2017 article in the Harm Reduction Journal found, “Results show important risk factors for drug use including low perceived self-efficacy or enjoyment in courses, poor accommodation of special needs, reliance on external validation, having a low GPA, and experiencing a mental health issue.” [12] With the rise in social media and talks centered on mental health, pharmacists need to be alert to mitigate this “study drug” phenomenon. Pharmacists need to push the focus on alternatives, if ever possible, such as mediation, yoga, cognitive behavioral therapy, proper nutrition, etc. These alternatives could help college students reduce the probability of substance abuse or misuse as well as positively improve their mental health. Again, the healthcare team, regardless of setting or perceived silos that exist, needs to be aligned on these best practices.

In 42 states and territories, pharmacists have access to Appriss Health’s PMP AWA Rx E software, which is a prescription monitoring program solution. Monitoring programs such as PMP AWA Rx E are vital to ensure pharmacists can recognize if a patient is receiving multiple medications from multiple prescriptions. Technology as a tool to detect and prevent diversion or abuse can most definitely bridge the gap between substance abuse and treatment. However, a tool is only truly effective if that tool is used. Pharmacists need to take charge of the available tools to ultimately see successful changes and impacts on substance abuse. Education plays a role here also. The side effects associated with Adderall need to be communicated by pharmacists to not only the healthcare team, but the general public. Informational campaigns that are targeted to reach universities and students could be extremely beneficial to allow awareness of the potential abuse risk and conversations to generate on all college campuses.

### **Dragons are Giant Beasts, But the Gatekeepers can Defend Nonetheless**

The three dragons discussed represent only a minute fraction of substance abuse issues. Dragons are difficult to fight against, but together, using the proper tools, the kingdom can be ultimately safer. Pharmacists need to have the communication skills that can address sensitive, difficult conversations and use the power of their voice to ensure patient care is safe and effective. Educational tools and monitoring programs are in place currently, but it is imperative that pharmacists do not rely on simply what has been done. It is imperative to push the boundaries and search for those keys that open doors to innovation and success, not simply those that are conveniently already unlocked.

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