

ABUSE OF PRESCRIPTION AND OVER-THE-COUNTER DRUGS TO OBTAIN ILLEGAL HIGHS: HOW PHARMACISTS CAN PREVENT MISUSE

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ABSTRACT

Practices of self-care and self-medication are crucial parts of any healthcare system. The process of self-medication includes the usage of over-the-counter (OTC) drugs. The prevalence of OTC medication use among patients could lead to a rise in OTC drug misuse. Due to their accessibility, pharmacists frequently serve as the initial point of contact for patients, giving them the chance to inform and advise them about the proper use of OTC medications. The usage of OTC drugs is guaranteed to be secure and efficient when a pharmacist is present. In order to manage patients' self-care behaviours, pharmacists can communicate with other healthcare professionals. A pharmacist has,

[however, typically been underutilised in this capacity. An overview of OTC drugs with abuse potential is given in this article, along with information on how self-medication affects OTC drug misuse. With the growing likelihood of switching from prescription to over-the-counter medications in recent years, this review goes on to highlight the challenges pharmacists confront in managing OTC medication abuse. Also, the possibility of a category of over-the-counter medications to improve interactions between patients and pharmacists was considered. The current review affirms the beneficial part performed by pharmacists in the prevention and treatment of OTC drug misuse. The review broadens our understanding of the challenges faced by pharmacists in preventing OTC medicine addiction and creating effective intervention techniques. OTC medicine abuse may be better managed, leading to better patient medication therapy management and results, by broadening the role of pharmacists.

KEYWORDS: Self-medication, medication, over-the-counter, and non-prescription.

INTRODUCTION

Drug: It is the single active chemical entity present in a medicine that is used for diagnosis, and prevention. treatment/cure of a disease.

Pharmacy: It is the art and science of compounding and dispensing drugs or preparing suitable dosage forms for the administration of drugs to man or animals. It includes collection and identification. purification, isolation, synthesis, standardization and quality control of medicinal substances.

The study of toxicology focuses on detecting, preventing and treating poisonings caused by drugs and other chemicals (household, pollutant, industrial, agricultural, and homicidal). It also includes the study of adverse effects of drugs, since the same substance can be a drug or a poison, depending on the dose.

Pharmacist: A **pharmacist**, also known as a **chemist** or a **druggist** is a healthcare professional who dispenses medications and who provides advice on their safe use, with the aim of preventing disease and promoting public health. Pharmacists often serve as primary care providers in the community and may offer other services such as health screenings and immunizations.

Over-the-counter (OTC) or non-prescription drugs are those that individuals buy for the treatment of common illnesses without a doctor's prescription. Many illnesses, such as headaches, the common cold, musculoskeletal discomfort, allergies, tobacco dependence, and heartburn, can be prevented and treated using OTC drugs. But, utilising over-the-counter medicines is never without risk. They include inaccurate self-diagnosis, insufficient dosage, problems with addiction after long-term use, unfavourable drug reactions, and drug interactions. The majority of people are ignorant of the hazards linked with OTC medications since they rarely talk to their doctors about their OTC prescriptions. Moreover, advertising to patients directly broadens their exposure to pharmaceuticals. In the absence of expert assistance, product use increases as a result. The use of over-the-counter medicines for non-medical purposes is considered OTC medication misuse for the purposes of this review. Contrary to OTC medicine misuse, which can include medication utilised for medical purposes but poorly used, such as incorrect dosage, lack of awareness of interactions,

inappropriate medication use, and incorrect duration of use, abuse is frequently intentional. Nonetheless, there is rising worry about the possible danger linked to these drugs. The goal of this article is to provide a brief overview of OTC medication abuse, its scope, the role of pharmacists in addressing this issue, the idea of BTC medications, and the necessary steps that pharmacists and the pharmacy profession must take moving forward to address the problem with a global impact. Few papers have examined the challenges faced by pharmacists and the measures taken to avoid misuse from a pharmacy-based approach, despite the fact that there have been articles researching OTC drugs and abuse. This review will give pharmacists and researchers a viewpoint on the potential contribution of pharmacists to the decline in OTC medicine abuse and the tactics that might be used to enhance that decline.^[1,2,3,4,5,6,7,8,9,10]

What is a prescription?

A prescription, frequently abbreviated as "or Rx," is a written request for a prescription drug from a doctor or other licenced health care provider that is addressed to a pharmacist.^[11]

Which drugs should be given with a prescription?

Medicines included in Schedules H and X must only be sold by retail on a Registered Medical Practitioner's prescription, according to the Drugs & Cosmetics Rules. Right now, there are 510 pharmaceuticals on Schedule H and 15 drugs on Schedule X, respectively. Via Gazette notification GSR 588 (E) dated 30-08-2013, a new Schedule H1 containing specific third and fourth-generation antibiotics, certain habit-forming medications, and anti-TB pharmaceuticals was recently established.

These drugs are required to be sold in the country with the following conditions:

1. When a drug listed in Schedule H1 is supplied, the prescriber's name and address, the patient's name, the drug's name, and the quantity supplied must all be documented in a separate register. These records must be kept for three years and be available for examination.
2. The drug listed in Schedule H1 must be marked with the symbol Rx, which must be prominently displayed in red on the label's left top corner, as well as the accompanying text in a box with a red border:^[12]

What Is Prescription Drug Abuse?

When you take a medication for a purpose other than the one for which the doctor prescribed it, you are abusing prescription drugs. More than 18 million adults aged 12 and older are thought to have used prescription medications non-medically in the previous year, according to experts. More than 6% of Americans are represented by that.

Abusing medicines, even ones that are prescribed to you might alter how your brain functions. Most patients first decide whether to use these drugs. But, when your brain develops over time, it has an impact on your capacity to maintain control and make wise choices. You feel a strong temptation to use more drugs at the same moment.

Which Prescription Drugs Are Commonly Abused?

According to the National Institute on Drug Addiction, three categories of prescription medications are frequently abused:

Opioids: The number of prescriptions for opioid medicines like codeine, hydrocodone, morphine (Astramorph, Avinza, Kadian, MS Contin, and Oramorph SR), and oxycodone has increased dramatically since the early 1990s (OxyContin, Percocet, Vicodin). The ageing of the American population and the increase in chronic pain sufferers are two contributing factors.

If you take these medications as prescribed by your doctor, they can help you improve your quality of life and effectively control your pain. When you use opioids for a brief period of time or under a doctor's strict supervision, it is conceivable but not typical to develop an addiction to or dependence on them. However, taking them frequently might result in drug abuse, dependency, and addiction.

A fatal overdose of opioids is also a possibility. You run a larger risk of having breathing issues or passing away if you combine them with drugs that affect your central nervous system, such as alcohol, barbiturates, or benzodiazepines like alprazolam (Xanax), clonazepam (Klonopin), or diazepam (Valium). Opioids can produce a slight sense of delight. To hasten the effect, some persons who use them illegally snort or inject them. The risk of contracting illnesses like HIV and hepatitis C increases if you inject drugs.

Central nervous system (CNS) depressants

Benzodiazepines, such as Ativan, Valium, and Xanax, are prescribed to millions of Americans for the treatment of anxiety and sleep disorders like insomnia. They have an impact on GABA, a brain neurotransmitter (gamma-aminobutyric acid). GABA reduces brain activity, causing you to feel relaxed or sleepy.

Barbiturates, such as secobarbital (Seconal), phenobarbital (Luminal), pentobarbital (Nembutal), and amobarbital (Amytal), all depress the central nervous system. They are prescribed by physicians to treat seizures and are used as anaesthetics.

You might feel more at ease and sleepy after using CNS depressants for a few days or weeks. Yet with time, you might require higher doses to have the same effect. Their combined use of alcohol can result in death due to slowed breathing and heartbeat.

If you abruptly quit taking CNS depressants after taking them for a long time, you could experience life-threatening issues such as withdrawal seizures.

Stimulants: These medications provide your body with a big increase in energy, focus, and alertness. They increase your blood pressure, blood sugar, and heart rate. They also widen your airways and constrict your blood vessels

Stimulants were first used by doctors to treat obesity and asthma. Currently, they are prescribed for illnesses like narcolepsy, ADD, depression, and ADHD. Dextroamphetamine (Dexedrine, Dextrostat, ProCentra), lisdexamfetamine (Vyvanse), methylphenidate (Concerta, Daytrana, Methylin, Ritalin), and an amphetamine and dextroamphetamine combination are some examples of stimulants (Adderall).

Addiction can result from the misuse of stimulants, such as consuming them in greater dosages or crushing and snorting pills. Your body temperature may increase with high doses. The uneven heartbeat may result from improper usage of stimulants or their use in conjunction with decongestants.

Prescription Drug Abuse Risk Factors

According to research, some personal characteristics may increase your risk of abusing prescription medications. These risk elements consist of:

- Influence of close friends or co-workers

- Age biology or factors influenced by genes
- Mental health
- Understanding of prescription drug side effect

Prescription Drug Abuse Signs and Symptoms

The substance in question can affect the signs of misuse. A person who misuses opioids may:

- Dizziness
- Shallow or sluggish breathing
- Constipation, vomiting, or an upset stomach
- Speech slur Poor motor skills
- Mood changes
- Moodiness or worry

CNS depressants can be abused to cause

- Mood shifts
- difficulty walking
- difficulty concentrating
- faulty judgement
- slow reactions
- Speech that is slurred Memory issues
- The breath slowly

Abuse of stimulants manifests as

- Losing weight and having no appetite
- Dizziness
- Headache
- Insomnia
- Nervousness
- elevated blood pressure
- erratic heart rate
- Paranoia^[13]

What are OTC drugs?

OTC meds are those that can be purchased at drugstores or supermarkets without a prescription. If taken as directed, over-the-counter medications are usually safe. They have

the same potential for abuse as illicit and legal drugs. Even if OTC medications are less strong than other drugs, there is still a chance that they will lead to addiction.^[14,15]

Abuse of OTC drugs

The term "abuse" was defined as the deliberate, non-therapeutic use of a product, OTC or prescription medication, by a patient or consumer for a perceived reward or desired non-therapeutic result, including but not limited to getting "high."^[16]

How OTC drugs are misused?

The abuse of prescription and over-the-counter (OTC) medications can have detrimental effects on both the individual and society. Prescription and over-the-counter medications can be abused in the following ways:

- Non-prescription drug use: Many people use prescription medications without a prescription from a physician or other healthcare provider. Drugs may have unwanted side effects or combine with other prescriptions, making them potentially dangerous.
- Overdosing on medication: Some patients take more medication than is advised, either because they believe it will be more successful or because they have a drug addiction. Overdose from this has the potential to be lethal.
- Medication sharing: Despite not having a prescription, some people share their prescription medications with others. This is a risk because the medication might not be suitable for the individual taking it.
- Misusing prescription medications for non-medical objectives, such as getting high or enhancing performance: Some people abuse prescription drugs for non-medical purposes, such as these. This is particularly typical with addictive stimulants and narcotics.
- mixing prescription pills with alcohol or other substances: Some people combine their medications with alcohol or other drugs, which is risky and perhaps fatal. Drug blending raises the possibility of an overdose and can have unforeseen negative effects.
- Ignoring warning labels and directions: Some individuals fail to heed the warnings on prescription and over-the-counter medications, which may result in unwanted side effects or interactions with other medications.
- Using expired medication: Some individuals utilise expired medication, which may be hazardous or ineffectual.

Always follow a doctor's instructions when using prescription and over-the-counter medications, and never share your medication with others. Consult a medical practitioner or

addiction specialist for assistance if you or someone you know is having problems abusing prescription medications.^[17]

Prescription drugs misuse

Abuse of prescription medications has become a grave issue in our time. This is particularly true among young adults and teenagers, whose usage of illicit drugs, with the exception of marijuana, has eclipsed all other drug use. Opioids, benzodiazepines, and stimulants have historically drawn the most attention, but other commonly prescribed medicines may also be abused, misused, or diverted for non-medical uses. Teenagers use prescription medicines recreationally to relax, reduce anxiety, or enhance their academic performance. Drugs can be obtained from friends or family, by a doctor's direct prescription, from a drug dealer, or online. Yet, there are few national statistics on the frequency of youth prescription medication addiction. There are more and more reports that indicate the issue is becoming worse.^[18]

Quetiapine

Due to its sedative, relaxing, and anxiolytic properties, quetiapine appears to be the second-generation antipsychotic that has been most extensively recorded as being abused. Data from the Drug Abuse Warning Network (DAWN) for the prevalence of emergency department (ED) visits among the US general population involving quetiapine showed an increase between 2005 and 2011, from 35,581 ED visits to 67,497. High rates of quetiapine-related ambulance attendance and emergency department visits have been reported. Similar information on rising quetiapine ambulance attendance rates was discovered in Australia and linked to concurrent opioid replacement treatment toxicity, heroin and alcohol abuse history, and mood disorders.

Moreover, drug-seeking behaviours have been observed, including the provision of illegal drugs and a rise in the availability of quetiapine on the black market. The populations most at risk of abusing drugs are those who are in prison, receiving mental outpatient treatment, have a history of abusing drugs, and are addicted to opioids. The routes of ingestion through the intranasal and intravenous cavities have also been discussed.^[19]

Drugs for Cough (Dextromethorphan, or DXM)

When misused, cough medications can result in hallucinations and a strong high. Young people frequently use cough medications since they are frequently available in medicine

cabinets at home or at friends' homes. The Drug Enforcement Agency (DEA) provides a list of various dose-dependent plateaus that DXM abusers may encounter. DXM should not be used more than 120 mg per day because doing so will result in drunkenness and serious adverse effects.

- Mild stimulation and euphoria are brought on by a dose of 100–200 mg.
- For higher euphoria and hallucinations, take 200–400 mg.
- Loss of motor coordination and visual abnormalities occur at doses of 300–600 mg.
- 500–1500 mg produces out-of-body experiences.^[20,21,22]

High doses of DXM can cause

- Breathing difficulties
- Falling asleep
- Twitching of muscles
- Extreme somnolence
- Heart flutters
- Modifications in blood pressure
- High body temperature
- Vomiting
- Quick heartbeat
- Distorted vision
- Twitching of muscles
- Brain injury

Z-drugs

The so-called hypnotic medications known as Z-drugs (zolpidem, zaleplon, and zopiclone) were first made available in the 1980s for the temporary treatment of insomnia. Because of their enhanced pharmacokinetic features and receptor selectivity as compared to benzodiazepines, it was thought that they had a better and safer profile. Via increased Î³-aminobutyric acid (GABA) transmission at the same GABA-type A receptor as benzodiazepines, their potent hypnotic effects result in both a reduction in sleep latency and an enhancement in sleep quality.

Concern for their safety has increased recently due to abuse and dependence difficulties, drug-assisted sexual assaults, and risky sleeping habits (e.g. sleep eating, sleep driving and sleepwalking). Male and teenage recreational consumers of high-dose substances have been

described as using hypnotic medications in problematic ways. They are frequently administered intranasally or intravenously along with other licit or illegal medications in drug misuse.

It was found that long-term users, particularly those who had SUDs and mood/neurotic disorders as co-occurring illnesses as well as elderly individuals taking Z-drug hypnotics for insomnia, were more likely to abuse drugs since they were unable to reduce their dosages to control withdrawal symptoms. Both zolpidem and zopiclone carried the same dependence risk, however, zopiclone was more frequently found in illicit drug sales and adverse drug reactions associated with overdoses. Z-drugs are similarly regulated like benzodiazepines under the Misuse of Drugs Act and Regulations as Class C and Schedule 4 narcotics as of 2013.^[23,24]

Promethazine

Promethazine is frequently used as a histamine (H)₁ receptor antagonist to treat the symptoms of motion sickness, allergies, nausea, and the common cold. Its misuse potential appears related to its soothing and sedating impact and amplification of other co-ingested substances, such as benzodiazepines and opioids. It is frequently included with codeine in common cough suppressants.

Promethazine misuse, with some variations involving purple-coloured alcohol (or "purple drank"), has grown in popularity among young people due to its euphoric effects and ease of accessibility. Promethazine has been reported to be misused among people with a SUD or an opioid dependence as a replacement for another drug (for instance, if the desired drug is not available or is too expensive) or to enhance the effects of insufficient opioid dosing, despite being preferred to other substances, such as benzodiazepines, for the treatment of anxiety and sleep disorders in substance-dependent patients (i.e. to delay the onset of opioid withdrawal).^[25,26]

Abuse of OTC drugs during the COVID-19 pandemic

Over-the-counter (OTC) drug usage has increased as a result of the COVID-19 pandemic. Here are a few ways that over-the-counter medications have been abused throughout the pandemic.

- Self-medication: Some individuals have been taking over-the-counter (OTC) medications to treat COVID-19 symptoms like fever, coughing, and body aches. This, however, carries a risk of erroneous therapy and delayed detection of other disorders.
- Several people have started hoarding over-the-counter medications, such as pain relievers and cough syrup, out of concern about shortages or in anticipation of a possible COVID-19 infection. Stockpiling, however, raises the chance of accidental overdose and can result in shortages for people who truly need the prescription.
- Misuse of hand sanitisers: Throughout the epidemic, demand for hand sanitisers, which are OTC medications, has been extremely high. Yet, some individuals have been consuming hand sanitisers or utilising them to induce intoxication in order to misuse them. This is a risk because hand sanitisers frequently contain high concentrations of alcohol, which is deadly if consumed.
- A lot of people have experienced tremendous worry and anxiety as a result of the pandemic, and some have sought solace in over-the-counter medications like sleep aids and anti-anxiety pills. But this could result in dependency and addiction.
- Using over-the-counter medications to treat mental health conditions: Due to the difficulty in getting access to mental health treatments during the epidemic, some people have been utilising over-the-counter medications to treat mental health conditions like depression and anxiety. Nevertheless, over-the-counter medications are not a replacement for skilled mental health treatment and may potentially be hazardous.

Always follow the directions on the label or those of a healthcare provider while using over-the-counter medications, and ask a doctor for guidance if you have any concerns or queries. Get assistance from a medical practitioner or mental health specialist if you or someone you know is experiencing substance addiction or mental health concerns during the pandemic.^[27,28,29]

OTC Drug Dependence

Over time, recreational OTC medication usage can potentially alter the chemistry of the brain. Over time, the user develops a tolerance to the drugs, requiring ever higher doses to achieve the same results. When OTC drug users quit taking, they may experience withdrawal symptoms as well.^[30,31]

Common symptoms of OTC drug withdrawal include

- Confusion

- Irritability
- Agitation
- Anxiety
- Mood shifts

It can be challenging to recognise an OTC drug addiction. Tylenol and other over-the-counter medications for coughing don't have the same negative connotations of danger as illegal substances like heroin. Many loved ones of those addicted to OTC medicines don't know how to look for indicators of a developing problem because they don't always regard them as addictive.^[32]

Role of Pharmacist in OTC Medications

People can easily and at no cost consult a pharmacist for advice. Pharmacists may readily address a variety of patient concerns, such as product selection, OTC brand name ambiguity, proper product use, and when to take drugs. As a result, pharmacists have a big say in what OTC medications people choose to buy.

The complicated nature of the product option for many patients is a result of manufacturer marketing tactics. A line extension is a frequent marketing strategy used by pharmaceutical companies. Advertising and line extensions for over-the-counter medicines account for a sizable portion of revenue. Other products are marketed under the expansion of an existing brand once a firm has one. Examples of line expansions for the main brand Tylenol® include Tylenol PM® and Tylenol Cold and Cough®. Patients frequently become confused as a result of this. These line extensions frequently contain many substances, adding to the confusion. In these situations, a patient-pharmacist conversation would aid patients in making decisions.

Patients frequently choose OTC medications as a result of OTC ads. A patient might receive inaccurate information if the advertisements are deceptive. 21 With little information on the risks and side effects, the adverts emphasise the medication's positive effects. In this regard, a pharmacist can also offer insight into all facets of the drug as well as details on how OTC medications should be used safely.^[33]

What can a pharmacist do?

Federal and state laws pertaining to legitimate prescriptions must be followed by a pharmacist who suspects prescription medication abuse. That might entail moving forward. Consider taking the following actions based on the particular scenario.

1: Contact the prescriber

You have a right and a duty to seek further information if you have questions regarding the legality or application of a prescription. Pharmacists may need to get in touch with the prescribing doctor and think about declining to fill a certain prescription.

Finding out why a patient needs the drug and confirming that it matches their outward symptoms can both be accomplished by speaking with a doctor.

2. Contact other pharmacies that have filled prescriptions for the patient

Maybe the pharmacy recently filled a similar prescription from a different doctor. It can't hurt to look for more information when something is bothering you in your gut.

You can call the DEA or state authorities if you find a pattern of improper prescribing or abuse. However, if a patient is involved, it may be appropriate to file a report with the local police. If a prescriber is clearly inappropriate and there are concerns about public and/or patient safety, the pharmacist has an obligation to report such activity to the state board of narcotics within their jurisdiction.

3. Request more information from the patient

There can be a good reason why a patient pays cash or requests an early refill. Speaking with your consumer might broaden your perspective and aid in ruling out any potential prescription drug abuse. To see whether the specifics your patient describes match the trends you notice in the database, check your state's prescription drug monitoring programme (PDMP).

4. Provide the patient counselling or refer them to an addiction treatment facility

You might wish to have a conversation about the risks of prescription drug abuse and future steps if your further inquiry suggests that prescription drug abuse is occurring. Also, pharmacists can counsel patients and direct them to options or referrals regarding substance usage.

5. Decline to fill the prescription.

Other than suspected prescription drug abuse, there are a variety of other reasons you might not be able to fill a prescription. A medication may be out of stock, the doctor's handwriting may not be legible, there may be missing information, or it may interact dangerously with another prescription.

However, if you think a prescription is being used unlawfully, you might want to think about declining to fill it—as long as it's legal under state law.^[34,35]

RESULT

Patients were often unaware of the potential adverse effects of their medicine. This does not appear to impair their ability to detect adverse drug reactions (ADRs). A number of the patients reported ADRs, and they suspected a medication was to blame because of the timing or unexpected nature of the illness. Patients learned about medications via a variety of sources, including health care providers, acquaintances, and family. Despite their widespread availability, patients rarely used patient information booklets. The leaflets were usually only read if the medicine was new or if there was a side effect. The booklets were criticised for their poor appearance and lengthy lists of negative effects.

CONCLUSION

Accurate information and advice from health care experts may aid to reassure patients and ensure they are fully informed about the medications they use.

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Furthermore, we would want to convey our appreciation to the people and communities impacted by prescription and over-the-counter drug usage. Your experiences and problems have encouraged us to raise awareness and advocate for drug-prevention strategies.

Finally, we appreciate the readers for their interest in this topic and their participation in tackling the issue of drug misuse. We hope that this article is useful to pharmacists and other healthcare professionals in their efforts to prevent prescription and over-the-counter drug addiction and protect the health of patients and communities.

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