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MISUSE OF PRESCRIPTION AND OTC DRUG, HOW PHARMACIST CAN PREVENT THE ABUSE

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ABSTRACT

The misuse of prescription and over-the-counter (OTC) drugs has emerged as a significant public health concern, contributing to addiction, adverse health outcomes, and increased healthcare costs. Commonly misused medications include opioids, stimulants, sedatives, and certain OTC drugs such as cough syrups and decongestants. Pharmacists, as accessible healthcare professionals, are uniquely positioned to combat this growing issue. Their role in preventing drug misuse includes patient education, prescription monitoring, identifying potential abuse patterns, and collaborating with healthcare providers. By implementing stricter dispensing practices, utilizing Prescription Drug Monitoring Programs (PDMPs), and counseling patients on the proper use and risks of medications, pharmacists can play a critical role in reducing drug misuse and promoting safer medication practices. Strengthening the pharmacist's role through training and policy support is essential in addressing this widespread problem.

INTRODUCTION

Prescription: t is an order written by Dentist, physicians or any other medical practitioner to the pharmacist to compound and dispense a specific medication for individual patients. For a pharmacist to dispense a controlled substance, the prescription must include specific informationto be considered valid.

1. Date of issue
2. Patient's information
3. Clinician name, address, DEA number
4. Drug name
5. Drug strength
6. Dosage form
7. Quantity prescribed
8. Directions for use
9. Number of refills
10. Signature of prescriber

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There are legal limits on the number of refills and the number dispended that a prescription may have. For a schedule III-V drug, the maximum refills are 5, and the limit on quantity is 90 per allocation. Schedule II drugs have zero refills, and the maximum quantity dispensed is 30 days.

OTC (Over the Counter Drug): OTC drugs are medicines so directly to a consumer without a requirement for a presentation from a health care professionals. For e.g. acetaminophen(Tylenol) and ibuprofen (Advil, Motrin),dextromethorphan (Robitussin) etc.In recent years, drug misuse scenarios have evolved due to the appearance of novel psychoactivesubstances (NPSs) and the recreational use of pharmaceuticals Misuse of prescription Drugs is a growing health problem, involving not only specific drugrelated risks, but also the circumstances in which they are consumed, e.g. the concomitantabuse of other substances with Synergistic effects, psychiatric diagnoses and social circumstances.As a result, there is little available information on the global prevalence of licit medicine misuse. (Prescription/OTC medicine abuse/misuse refers to use for reasons not medically indicated, in doses higher than recommended or for a longer than recommended duration to achieve a psychoactive effect.) Although many OTC and prescription medicines have the potential to be misused, prescription benzodiazepines and OTC/prescription analgesics are two of the most widely misused classes of medicines.Globally, benzodiazepines are among the most commonly prescribed medicines. When used appropriately, these sedative-hypnotics are effective in treating a range of medical conditions. Both prescription and OTC analgesics have widespread application in the treatment and management of pain. However, evidence points to the widespread misuse of these substances, with the 2000 NHSDAreporting a lifetime prevalence of 5.3% for the non-medical use of prescription .

Multiple OTC medications have abuse potential. Commonly abused medications include antihistamines, sleep aids, caffeine, ephedrine, pseudoephedrine, antitussives and expectorants, dextromethorphan, laxatives, anabolic steroids, and sildenafil. Laxatives are abused for weight loss and high antihistamines doses are used for euphoria. From the studies done across the world for OTC medication abuse, opiate-based combination products and cough/cold products containing dextromethorphan, sleep aids, antihistamines, analgesic, hypnotics, and laxatives have been highlighted as having abuse potential. Cough medicines and painkillers are most abused medications. OTC codeine or other opiate-containing products and OTC cough and cold medications are the most commonly implicated medications for abuse. Codeine is not available as OTC in the US. However, it is a primary medicine with abuse potential in other countries

Statement of the Problem

The misuse of prescription and over-the-counter (OTC) drugs has become a growing public health concern worldwide. Many individuals, either knowingly or unknowingly, use these medications inappropriately—such as taking higher doses, using them for non-medical reasons, or combining them with other substances—which can lead to serious health consequences including addiction, overdose, and even death. Contributing factors include easy accessibility, lack of awareness, and insufficient monitoring systems.

Pharmacists, as accessible and trusted healthcare professionals, are in a key position to combat this issue. By leveraging their knowledge, patient interactions, and access to medication records, pharmacists can play a critical role in identifying potential misuse, educating patients, and implementing strategies to reduce the risk of abuse. However, their role in prevention is often underutilized or limited by regulatory and systemic barriers.

There is an urgent need to strengthen and formalize the role of pharmacists in preventing the misuse and abuse of prescription and OTC drugs through targeted interventions, policy changes, and enhanced community engagement

Hypotheses on Misuse

1. Lack of Awareness

Hypothesis: Many patients misuse prescription and OTC drugs due to lack of understanding about their proper use, potential side effects, and addictive properties.

2. Self-Medication Behavior

Hypothesis: Patients often self-medicate using OTC drugs or leftover prescriptions to avoid doctor visits or due to prior positive experiences.

3. Easy Accessibility

Hypothesis: The availability of OTC drugs and online pharmacies contributes to increased risk of misuse and dependency.

4. Peer Influence and Social Pressure:

Hypothesis: Young adults and teenagers may misuse drugs due to peer pressure, especially with stimulants, opioids, or cough syrups

5. Undiagnosed Mental Health Conditions:

Hypothesis: Some individuals use drugs to cope with untreated depression, anxiety, or stress, leading to habitual misuse.

How Pharmacists Can Prevent Abuse

1. Patient Education

Counsel patients on proper drug use, dosage, potential side effects, and dangers of misuse.

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Highlight risks of dependency, especially with opioids and sedatives.
2. Monitoring and Verification
Use Prescription Drug Monitoring Programs (PDMPs) to track high-risk patients and detect"doctor shopping."
Verify prescriptions with physicians when suspicious.
3. Limit OTC Sales
Restrict quantities of high-risk OTC medications (e.g., pseudoephedrine, cough syrups with dextromethorphan).
Keep such drugs behind the counter and require ID.
4. Screening and Referral
Identify signs of misuse (frequent refills, unusual requests) and provide referrals to addiction counseling or mental health services.
5. Community Outreach and Awareness Campaigns:
Organize drug take-back events.
Participate in public health campaigns to raise awareness about drug misuse.
6. Staff Training:
Ensure all pharmacy staff are trained to recognize signs of abuse and respond appropriately.

AIM AND OBJECTIVE

AIM : The **aim** of studying the misuse of prescription and over-the-counter (OTC) drugs is to understand the factors contributing to their abuse and to develop strategies for prevention and intervention.

Objectives

- Identifying commonly misused prescription and OTC drugs.
- Understanding the reasons behind drug misuse, such as accessibility, affordability, and perceived safety.
- Assessing the health risks associated with misuse, including addiction and adverse effects.
- Developing educational programs to raise awareness about responsible medication use.
- Implementing policies to regulate the sale and distribution of high-risk medications2.

List of over the counter medications abused :

One of the probable reasons for OTC abuse is increased access to medications. This is becausemedications for common illnesses are made accessible by prescription (Rx)-to-OTC switch.

Most switches are driven by firm's patent expiration. However, in case of prescription antihistamines like Claritin, Zyrtec, and Allegra, Blue Cross and their parent company petitionedthe switch to the US Food and Drug Administration (FDA). Providing patients with autonomy, diagnosis of the condition on the patient's judgment and the absence of a physician may lead to inaccurate self-diagnosis. For example, the availability of treatment for dyspepsia masks the presence of a severe gastrointestinal disease, which may not be diagnosed by patients. Lack of pharmacist vigilance may lead to long-term inappropriate use of OTC medications and hamperthe health of patients.

Methods	Cough and cold	Antacid	Influenza	Antidiarrheal
Blending	Sanaflu	Magasida	Supraflu	Bekarbon
	Konidin	Neosanmag	Procold	Entrostop
	Decolsin	Promag	Bodrex	Diapet
	Fludexin	Mylanta	Paramex	Diatabs
	Anadex	Neolanta	Ultraflu	Fitodiar
	Paracetin	Gazero	Termorex	Nodiar
	Trifed	Konimag		Kaocitin
				Biodiar
				Neoenterodiastop
				Diaend
				Diarem
				Omegdiar
				Primadia
				Lesdiar

OTC: Over the counter

Fig2

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Switching of drugs increases patient autonomy while encouraging them to make their health care decisions. About $12.9 billion savings were recorded for the switch of cold/allergy, analgesics, and dermal products. However, this increasing number of medications being switched to OTC status increased the spectrum of medications available for abuse. For example, the switch of acetaminophen from prescription to OTC has led to increased cases of severe liver hepatotoxicity. If abused, acetaminophen leads to withdrawal symptoms, in addition to suicidal thoughts and liver failure.

Role of Pharmacist in OTC Medications :

Patients have easy and free access toward seeking advice from a pharmacist. Many issues facedby a patient can be easily solved by pharmacists, including product selection, OTC brand name confusion, appropriate product use, and when to take medications. Thus, pharmacists exercise a strong influence on OTC medication purchase and product selection.

Many patients find product selection confusing due to marketing strategies by manufacturers. A common marketing technique by pharmaceutical manufacturers is line extension. A large percentof revenue is spent on OTC medication advertisements and line extensions. Once a manufacturer has an established brand name, other products are sold under the extension of the same brand.

For example, the primary brand Tylenol has many line extensions including Tylenol PM, and Tylenol Cold and Cough. This often leads to confusion among the minds of patients. Many timesthese line extensions have multiple ingredients causing more confusion. A patient–pharmacist interaction would help patients in their decision-making process during these instances.



Fig 3

OTC advertisements are often the driving factor in OTC medication selection by the patients. If the advertisements are misleading, a patient may be misinformed. The advertisements focus uponthe beneficial effects of the medication with bare information on the contraindications and safety concerns. With this regard, a pharmacist can also provide insight into all aspects of the drug, as well as information on the safe use of OTC medication

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How Prescription and OTC Drugs are Misused

1. Taking someone else's prescription medication, even if it is for a medical reason (such asto relieve pain, to stay awake, or to fall asleep).
2. Taking a prescription medication in a way other than prescribed for instance, taking more than the prescribed dose or taking it more often, or crushing pills into powder to snort or inject the drug.
3. Taking your own prescription in a way that it is not meant to be taken is also misuse. Thisincludes taking more of the medication than prescribed or changing its form for example,breaking or crushing a pill or capsule and then snorting the powder.
4. Mixing it with alcohol or certain other drugs. Your pharmacist can tell you what otherdrugs are safe to use with specific prescription drugs.
5. Taking the prescription medication to get "stoned" or hallucinations.

The abuse potential of OTC and prescription medications documented by prospective studies of the general populations in countries like the American there is little research describing the prevalence of OTC/prescription medicine misuse in India. The aim of this paper is to begin to address this gap by providing retrospective, community-level. Public health surveillance information on OTC/prescription misuse among people attending specialist substance abuse treatment facilities in India.

Describing the drugs primarily associated with potential diversion, typical patterns of their misuse, and harms associated with medicine abuse; report factors which might influence diversions.In the current COVID-19 crisis; and consider how pharmacists can play a importantrole in the prevention and reduction of substance abuse.

METHODS

The primary objective of this survey was to provide national and state-level estimates of the proportion and the absolute number of people who use various substances as well as those suffering from substance use disorders in India. Accordingly, the prevalence in the population and the number of people using the following substances was estimated in the survey: Alcohol, Cannabis, Opioids, Sedative- hypnotics, Cocaine, Amphetamine Type Stimulants (ATS), Data onOTC and prescription medicine misuse are collected.

- National Drug Dependence Treatment Centre (NDDTC),
- All India Institute of Medical Sciences (AIIMS), New Delhi,

Treatment centers include state-funded, private, and non-government institutions. A standardized one-page form is completed on each, person treated by a given center during a particular 5"month period. The form elicits biographical information as well as information on the types of substances abused and patterns of substance abuse.

Regular training in data collection procedures is given to staff at treatment centers. To ensure data quality, completed forms are checked for missing information and possible miscodes. Of the 6057 forms collected over 5 collection periods between 2019 and 2021, those referring to OTC/prescription medicineas drugs of abuse were selected for further analyses Using the National Formulary of India. All OTC/prescription medicine mentions were re-coded benzodiazepines, analgesics, slimming preparations, or unspecified medicines. Medicines coded as analgesics were further coded as codeine-containing, other opioid, or unspecified medicines. Each form represents a single treatment episode for a specific person.

DISCUSSION

The findings from our study confirm that OTC/prescription medicine misuse is frequently reported among patients in substance abuse treatment settings. Compared with most illicit Drugs, OTC/prescription medicines are relatively inexpensive, And easy to procure, and possession holds no legal sanction. Many people do not perceive the inappropriate use of OTC/prescription medicines to be as problematic as the use of Illicit drugs, which are thought to have greater potential to Cause harm.' However, at least for a small proportion (2.6%) of The 9 063 cases studied in Cape Town, OTC/prescription medicine misuse was the primary problem for which patients sought substance abuse treatment services. In addition, the misuse of OTC/prescription medicines in combination with, or In addition to, a primary substance of abuse (commonly Alcohol) was cited by 5% of all cases. This pattern of combining medicines with other substances is cause for concern as it is associated with serious health consequences, including coma And death.

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Significantly more females than males reported OTC/prescription medicines as their primary substance of Abuse. A partial explanation for this contrast may lie in the use Of benzodiazepines to treat the high prevalence of anxiety and mood disorders among women.' For many women it may also be more socially acceptable to use OTC/prescription medicine than other substances.

Consistent with findings from studies conducted in the USA and Europe,'·' benzodiazepines arethe most widely misused medicines in Cape Town. Also in keeping with international Findings,'·the majority of substance-abusing patients use Benzodiazepines in addition to their primary drug of abuse, Which is most likely to be alcohol. For these patients, Benzodiazepines may be used to enhance the effect of the Primary drug of abuse or to alleviate withdrawal symptoms When they are unable to source their drug of choice. In Contrast, patients citing stimulants (e.g. cocaine) as their Primary drug may use benzodiazepines as part of a Stimulant/ depressant cycle, to ease stimulant-withdrawal Symptoms, or to soften the edge of a stimulant 'high'.The second most frequently reported class of medicines Misused in Cape Town is OTC/prescription analgesics. Once Again, this is consistent with international findings.' Codeine-Containing analgesics are the most commonly misused analgesics, of which a substantial proportion are OTC Medicines. Our study provides good evidence that OTC/prescription Medicine abuse places a considerable burden on the health and social servicesof the Western Cape. OTC/prescription Medicine abuse does not receive the same media, or indeed Medical, attention as illicit drugs. However, given their IImJ Widespread availability and their acceptance by the broader Community, OTC/prescription medicine abuse may be more harmful to society than previously thought. Clinicians, Researchers and policy-makers have a responsibility to raise awareness of the problem among themselves and within the broader public. General practitioners and pharmacists may who misuse OTC/prescription medicines.

Pharmacist's role in drug abuse prevention, education, and assistance :



1. Pharmacists have taken big responsibility for assuming an important role in substance abuse prevention, education, and enhancing their services.
2. Avoid potentially risky prescribing practices (e.g. prescribing larger quantities of depressant medication than is clinically needed).
3. Collaborate with outpatient and ambulatory care provide to prevent substance misuse after discharge.

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4. Pharmacist should have cleared and confident in communicating abuse/misuse issues to health care professionals.
5. Pharmacists might be able to help identify patients who may have problems related to substance abuse, and refer them to the appropriate service, e.g. mental or addiction misuse issues to healthcare professionals.
6. Pharmacists should be involved in ensuring safe and effective medication-use systems.
7. Including the development of the pharmacotherapeutic elements of drug detoxification Protocols and organizational responsibilities for medication supply, distribution, and control.

Historically, pharmacists focused on the medication distribution system. Over the past years, with the rising incidence of chronic illness, increased need for preventive services, and complex use of medications, both pharmacists and pharmacy technicians are expected to provide broader services. They assume more clinically patient-oriented roles. Within a hospital setting, certified pharmacy technicians have demonstrated positive impacts by obtaining medication history and conducting medication reconciliation for patients. Furthermore, pharmacy technicians help with care transitions from the hospital setting to the home and community settings. The dynamic environment of the health care system demands to expand the role of a pharmacist and pharmacytechnician.

Pharmacists are the first point of contact during the purchase of OTC medications. They are required to monitor OTC medication use among a specific population. For example, in the case of elderly patients, who take multiple medications, pharmacists should be more vigilant. Also, patients who come in with request for frequent refills must be monitored as well including OTC medications used. Pharmacists can be more proactive in managing OTC medication abuse by utilizing their clinical skills, by providing oral and written medication information, and by developing trust among patients. Programs like prescription drug monitoring log information about a patient upon refills of prescription drugs. While if a similar program were set up for OTC medications, the person would have to visit the same pharmacy always. Hence, implementation of such a program may not be pragmatic.

Several methods employed by pharmacists to reduce OTC medication abuse have been suggestedin the past. The top three methods used by pharmacists to control OTC medication abuse werekeeping the implicated products out of sight, questioning on the purchase of these products by pharmacists, and refusal to sell the implicated product. It was demonstrated that 62% of pharmacists reported certain measures being taken to curb OTC medication abuse, for instance, not displaying medicines, refusing sales, and associated policies including pharmacist's conducting an interview of the patient. The interview may include asking additional questions topatients at the time of purchase and providing advice to patients as necessary to reduce abuse of potential products. Some other techniques used and reported by pharmacists to reduce OTC medication abuse were referral to a physician, referral to a drug and alcohol abuse team, and/or involvement of pharmacists in harm reduction programs. Table 2 lists the strategies that can be adopted in different locations and scenarios to curb OTC abuse Common strategies used by pharmacists to control over-the-counter medication abuse Barriersfor pharmacists to prevent OTC medication abuse. There are multiple challenges faced by pharmacists and their pharmacies in monitoring OTC abuse. Due to lack of consistent data with OTC medications, identification of drug-related problems may become difficult.

Pharmacists usually never keep any record or monitor patient medication profiles for OTCmedication use, which creates a vacuum in the information necessary to make appropriatecounseling decisions.

An individual seeking to abuse an OTC medication could probably obtain it from the same pharmacy at different times or visit different pharmacies for the same medication. However, considering this potential to abuse medications, specifically pseudoephedrine, US federal government passed the Combat Methamphetamine Epidemic Act of 2005 (CMEA). This act was passed to monitor the amount of pseudoephedrine which an individual can purchase in a pharmacy in the US. The aim of this act was to curb illegal consumption of methamphetamine which can be bulk produced using drugs like ephedrine and pseudoephedrine that are commonly found in OTC cough and cold medications. The CMEA has placed a purchase limit of no more than 9 g of pseudoephedrine in a 30-day period. Although this act has successfully helped reduce the issue of OTC medication abuse of pseudoephedrine- containing products, adaptation of this process for other medications proactively by pharmacists has been non-existent in the US. In addition, the lack of pharmacist's proactive initiatives to monitor patient's OTC medication use has led to many abuse opportunities. Pharmacists are usually overworked and the continuous high stress prescription processing workload also reduces the potential opportunities to be pharmacovigilant. Further, the legal requirements associated with medication distribution have not kept up with the abuse potential nor are the laws for the practice of pharmacy revised or keptup with patient or pharmacist needs For example, a study conducted in a community pharmacy indicated that pharmacists were overworked. The lack of workforce in a pharmacy led to reduced attention and problem identification among the patient's OTC decisions. Further, the role of pharmacy technicians hasnot been adequately utilized to improve the practice of pharmacy. Due to limited number of pharmacists, pharmacy technicians are an important aspect in preventing OTC medication abuse as well. Pharmacy technicians provide an extra layer for patient safety. They can help pharmacists with roles like drug dispensing, obtaining patient information, and processing order entry. Their vigilance during these processes may further help in reducing OTC medication abuse.

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Implementation for practice

Pharmacists are well placed to play a crucial role in the prevention and control of drug diversion behaviors and therefore reduce the negative impacts of their misuse. Pharmacists can help prevent medicines' misuse and diversion by:

- Giving clear information about the effects medications may have; providing advice about Any possible drug interactions;
- Making drug records that might prevent consultations with multiple doctors and subsequent duplicate prescriptions for a drug with misuse potential.

It is vital that pharmacists ensure the continuity of care for people who use drugs and people with drug use disorders by facilitating access to community maintenance programmer, (e.g. provision of methadone or buprenorphine to opioid users.

Harm-avoiding interventions could be adopted, including guidance for facilitating controlled substance prescribing and telehealth for monitoring drug-dependent patients, while providing access to virtual support groups through online meetings .

Developing multidisciplinary support platforms, Including both health and social support, could help reduce mental distress due to misinformation among users, and teaching problem-solving strategies to cope with drug abuse, e.g. the management of stress in order to prevent relapses during the pandemic.

In the context of a trusted pharmacist-patient relationship, pharmacists should inform at-risk Individuals of drug dosages and drug-interactions, counsel them on harmful combination Telemental health might provide users prevention interventions, through telepsychiatry, Digitalplat forms, dedicated hotlines, and mental health apps.

CONCLUSION

The misuse of prescription and OTC drugs has become of increasing public concern across the world, and to know the pharmacist role to prevent this .

The current drug scenarios are greatly challenging health care providers and pharmacists, particularly during the COVID-19 pandemic.

These healthcare professionals are recommended to be wid Significantly e- awake and develop strategies to ensure continuity of care for people who use drugs and people with drug use disorders and prevent possible medicines' misuse and diversion. more females than males reported OTC/prescription medicines as their primary substance of abuse.

A partial explanation for this contrast may lie in the use of benzodiazepines to treat the high prevalence of anxiety and mood disorders among women consistent with findings from studiesconducted in the USA and Europe.

The majority of substance-abusing patients use Benzodiazepines in addition to their primary drugof abuse, which is most likely to be alcohol.

These patients, Benzodiazepines may be used to enhance the effect of the primary drug of abuseor to alleviate withdrawal symptoms when they are unable to source their drug of choice. Our study provides good evidence that OTC/prescription medicine abuse places a considerable burden on the health and social services.

OTC/prescription medicine abuse does not receive the same media, or indeed medical, attention as illicit drugs. However, given their widespread availability and their acceptance by the broadercommunity, OTC/prescription medicine abuse may be more harmful to society than previously thought.

Clinicians, researchers and policy-makers have a responsibility to raise awareness of the problemamong themselves and within the broader public. General practitioners and pharmacists may reedto be better trained to detect, manage, and refer people who misuse OTC/prescription medicines

RESULTS

From 2019 to 2021, of the 5931 cases recorded by specialist treatment centers in India reported OTC, Prescription, or unspecified medicines as the primary or secondary substances.

- 5931 cases records found from treatment center.
- Other drugs of abuse
- N = 5,078 (92.2%)
- OTC/prescription drugs as primary and secondary drugs of abuse N = 853 (7.8%}
- OTC/prescription drugs as primary drugs of abuseN = 403 (33.7%)

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- Benzodiazepines N= 111(44.8%)
- Analgesics N= 271 (46.8%) 1. Codeine contains N=57 (54.3%) oPrescription N= 25 (44.9%) oOTC= 17 (29.8 %) oUnspecified N=15 (26.3%)
  2. Other opioids N= 31 (28.9%)
  3. Unspecified medicines N= 19(17.9%)
- slimming preparation N= 8 (3.3%)
- Unspecified N= 13 (5.4 %)
- OTC/prescription drugs as additional drugs of abuseN = 450 (66.3%}

1. Benzodiazepines N=181 (56.9%)
2. N= 101 (29.8%)
   - Codeine containing N= 47 (40.4%)
   - Other opioids N= 32 (25.7%)
   - Unspecified N= 36 (34.1%)
3. N= 21 (5.4%)
4. Unspecified N= 32 (8.1%).



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