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(Review Article)

Role of Pharmacists in Preventing Prescription and OTC Drug Abuse for Recreational Highs

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Abstract

There are increasing reports of abuse of many types of prescription and over the counter drugs for recreational purposes. OTC drugs that are used recreationally to obtain psychoactive benefits, either alone or in combination with other substances. This work presents an overview of the ingredients, concentrate on a range of drugs(e.g. tradition medicines similar as quetiapine, gabapentinoids, Z- medicines, bupropion, venlafaxine and untoward drugs similar as loperamide, dextromethorphan, benzydamine, promethazine, chlorphenamine, diphenhydramine and hyoscinebutylbromide) that have manifested as abuse and diversion, or have previously been characterized through the literature, are also flagged by pharmaceutical companies'online websites reporting new trends and trials of drug abuse.

This rapidly changing medication script represents a challenge for pharmacies, psychiatry, and public health and drug control programs. Additionally, possibly due to the COVID-19 pandemic, medication use habits and voids have changed, leading to changes in behaviors related to both conventional and OTC medications. The healthcare guru should be cognizant of the inherent deviations from traditional medicines, respect cases of abuse, consider the possibility of polydrug abuse and help where possible. Pharmacists can avoid and reduce drug abuse, and should elaborate on appropriateness-based conduct to help understand the conditioning of drug abuse and the adverse effects of drug abuse.

Keywords: Over-the-Counter Drugs, Psychiatry, Cognizant, Medications

INTRODUCTION

A prescription, which is frequently abbreviated as Rx or shortened TM, is a formal communication from a doctor or other licensed healthcare professional to a pharmacist granting them permission to distribute a certain prescription medication for a particular patient. In the past, a doctor would give a pharmacist instructions outlining the ingredients to be combined into a remedy. The abbreviation "℞," which is a capital R crossed to indicate "abbreviation," originates from the first Latin word of a prehistoric prescription, "Recipere" (Take thou). a prescription from a doctor giving a pharmacist instructions on how much of a certain medication to take at a given dose. A prescription also contains directions for the patient, including how long, how often, and how to take the medication.

Over-the-Counter drugs:

Medications that can be bought over-the-counter (OTC) do not require a prescription. By obtaining over-the-counter (OTC) medications from pharmacies, people can self-regulate their manifestations. For over-the-counter (OTC) medications—which are comparable to prescription drugs—there are store brand names, generic names, and brand names (commen name).Generic, store, and brand labels all have the same active components and work on the body in the same way as long as the amount of the substance is the same. The adverse effects of some of the OTC medications that are frequently overused are covered in this article. An extensive range of illnesses and symptoms, including pain, colds and coughs, diarrhea, nausea, and more, can be treated using over-the-counter medications. OTC medications are becoming more and more popular because of the potential for deviation to attain centrally psychoactive effects. These drugs include active ingredients that can be abused at higher-than-recommended quantities. Over-the-Counter (OTC) medications are used to prevent and cure a wide range of conditions, such as heartburn, headaches, musculoskeletal pain, allergies, and the common cold.

Prescription drug abuse includes using a medication differently than directed, taking someone else's prescription, even if it is for a legitimate medical condition like pain, or using a substance to get high. Prescription drug usage of this kind is referred to as non-medical use. The three categories of drugs that are most frequently mishandled are as follows: Opioids are typically taken to manage pain, whereas stimulants are most frequently prescribed to treat

attention-deficit hyperactivity disorder. Central nervous system [CNS] depressants, which include sedatives, hypnotics, and tranquilizers, are used to treat anxiety and sleep disturbances. Over 80% of elderly people (those between the ages of 57 and 85) use one prescription medication daily, and over 50% take five or more medications or supplements every day. If you use a prescription medication in a method not recommended by a doctor or for purposes other than those for which it was meant, this could lead to health problems. Age-related changes in drug metabolism, the prevalence of many chronic illnesses, and the potential for drug interactions make medication use riskier in older adults than in younger adults. Furthermore, a lot of elderly people use nutritional and herbal supplements in addition to over-the-counter drugs, which may exacerbate any unfavourable health impacts from non-medical prescription drug use.

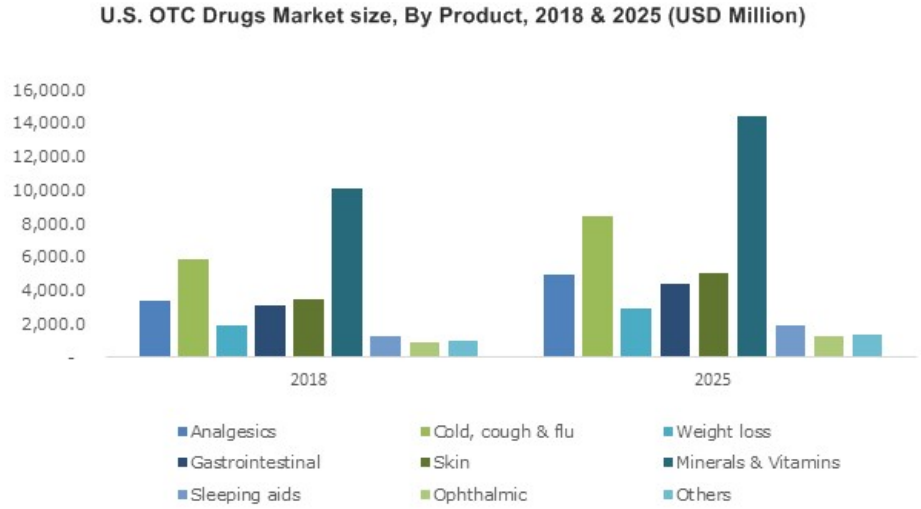

Figure 1: Market Analysis of OTC and prescription drugs

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OTC medication abuse

OTC medications with most potential for abuse:

Abuse of several OTC drugs is possible. Sleep aids, antihistamines, caffeine, ephedrine, pseudoephedrine, expectorants and antitussives, dextromethorphan, laxatives, anabolic steroids, and sildenafil are among the drugs that are frequently abused. Laxatives are used for high doses of antihistamines and are taken for euphoria and weight loss. A number of drugs have been identified as having the potential to be abused, including cough/cold medications containing dextromethorphan, combination products based on opiates, sleep aids, antihistamines, analgesics, hypnotics, and laxatives. The most commonly misused pharmaceuticals are painkillers and cough treatments. The most frequently implicated drugs for abuse are over-the-counter (OTC) cough and cold remedies, codeine, and other opiate-containing products. In the US, codeine is not sold over-the-counter. However, it is a major medication that may be abused in other nations. OTC codeine analgesics are the most often misused medication, according to numerous research. Highlights the OTC medications with high abuse potential.

Misuse of opioid drugs

Opioids are medications that work on opioid receptors in the brain and spinal cord to reduce pain signals. They also affect the areas of the brain that regulate emotions, which can further lessen the impact of unpleasant stimuli. For thousands of years, they have been used to relieve pain, diarrhea, and cough. These days, the most common use of opioids

is the treatment of acute pain. Certain people who use opioid medicine may develop hyperalgesia, which is characterized by increased pain sensitivity or a worsening of pain. The brain stem's breathing control regions interact with opioids, and overdosing poses a major concern. Suffocation from an opioid overdose can occur if the user experiences respiratory suppression to the point of suffocation.

When administered quickly enough, naloxone can reverse an overdose and prevent death. While codeine is typically provided for moderate discomfort, morphine is frequently recommended for severe pain both before and after surgical procedures. In addition to treating pain, some of these medications, like codeine and diphenoxylate, are used to treat severe diarrhea and coughing.

Effects of Opioids on brain and body

Opioids function by attaching to and triggering opioid receptor proteins on nerve cells found in the brain, spinal cord, gastrointestinal tract, and other organs. These medications block the transmission of pain signals when they attach to their receptors. In addition, opioids may result in drowsiness, nausea, constipation, respiratory depression, and mental disorientation.

Commonly misused CNS depressants:

Tranquilizers, sedatives, and hypnotics are examples of CNS depressants, which are drugs that lower brain activity. They can be used to treat anxiety and sleep issues because of this characteristic.

Benzodiazepines: Benzodiazepines including diazepam, alprazolam, and clonazepam are sometimes used to treat acute stress reactions, anxiety, and panic episodes. More sedating benzodiazepines, such triazolam and estazolam, are used to treat short-term sleep problems. Benzodiazepines are rarely given for long-term use due to the high risk of tolerance, dependency, or tolerance developing.

Non-benzodiazepine sleep medications: • Z-drugs, which include zolpidem, eszopiclone, and zaleplon, function on the same GABA type A receptors in the brain as benzodiazepines while having a distinct chemical structure.They are expected to have fewer side effects and a reduced risk of dependence and tolerance than benzodiazepines.

Barbiturates: As benzodiazepines have a lower overdose risk, medications such as mephobarbital, pentobarbital sodium, and phenobarbital are rarely used to treat anxiety and sleep disorders.

Effects of CNS depressants on the brain and body: -

Gamma-aminobutyric acid receptors (GABA), which are inhibitory neurotransmitter receptors, are the site of action for the majority of CNS depressants.

Because CNS depressants increase inhibition of brain activity by boosting GABA transmission, they all provide a sleepiness or calming effect that is medically helpful to patients suffering from anxiety or sleep difficulties, even though their mechanisms of action vary.

Consequences of CNS depressant misuse:

Despite having beneficial medicinal effects, benzodiazepines and barbiturates should only be taken as directed by a doctor.

Although there has been less research on non-benzodiazepine sleep aids, or "z-drugs," some signs have led to worries about their potential for abuse. Rapid reduction or cessation of intake may cause withdrawal and dependence.

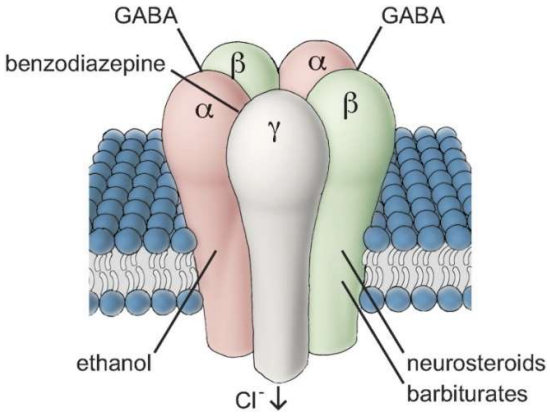


Figure 2: The GABA Receptor

Misuse of stimulants

In addition to raising heart rate, blood pressure, and breathing, stimulants also improve focus, alertness, and energy. In the past, stimulants have been used to treat neurological disorders, obesity, asthma, and other respiratory issues, among other ailments. These days, stimulants are only used to treat a small number of illnesses, including narcolepsy and attention deficit hyperactivity disorder (ADHD).

Effects of stimulants on brain and body:

The brain's monoamine neurotransmitters, which include dopamine and norepinephrine, are affected by stimulants such as methylphenidate and dextroamphetamine. These medications' effects on norepinephrine raise heart rate and blood pressure, narrow blood vessels, raise blood sugar, widen airways, and enhance dopamine signaling, which can lead to pleasure when used recreationally.

OTC Drugs:

Over-the-Counter (OTC) pharmaceuticals are safe and effective medications that the general population can use without a prescription. These medications are over-the-counter or non-prescription. It is not meant to replace prescription medications; rather, its main purpose is to relieve symptoms.

Examples of Misused OTC drugs:

Dextromethorphan (DXM):

Coughs and colds are treated with dextromethorphan. It is a non-opioid levorphanol congener that has neither addictive nor analgesic properties. Dextromethorphan is used alongside expectorants, decongestants, and antihistamines. Medical professionals should be alert to the abuse and overuse of this medication. Dextromethorphan can be abused by injecting it, eating it, mixing it with other opiates like alcohol or marijuana, or mixing it with soda for flavor. Common adverse effects include agitation, disorientation, exhilaration, and, in rare cases, serotonin syndrome. It should be avoided by patients using monoamine oxidase inhibitors (MAOIs).

Acetaminophen:

When it comes to pain and soreness, acetaminophen is invaluable, particularly for headaches. However, this medication is abused or misused by many, leading to the annual admission of 60,000 Americans to hospitals. Acetaminophen overdose can result in liver failure, and long-term use of this over-the-counter drug can harm the liver, raise liver enzyme levels, and induce toxic hepatitis. Doctors should be aware that acetaminophen can cause an unintentional overdose because it is present in many different products. It is not recommended for patients who take other medications that contain acetaminophen or who drink three or more alcoholic beverages in a day.

Antacids:

Antacids are used to treat sour stomachs, acid reflux, and heartburn. Maalox and Mylanta are two examples of products that include simethicone that can help reduce gas symptoms. Long-term antacid use may cause "acid rebound." Acid rebound is a confusing hypersecretory state of acid coupled with increased amounts of gastrin. Additionally, antacids can hinder the absorption of several prescription drugs. Furthermore, in 2016, the FDA released a statement warning consumers that consuming over-the-counter antacids containing aspirin increases the risk of severe bleeding.Constipation and diarrhea are two prominent side effects (of aluminum preparations; magnesium formulations).

Role of pharmacist in OTC medications

Patients can easily and at no cost consult a pharmacist for advice. A pharmacist can speak eloquently about many of the problems that patients have, such as choosing the right product, understanding OTC brand names, using the right product, and knowing when to take prescriptions. Consequently, druggists have a significant impact on the choice and acquisition of over-the-counter drugs.

A lot of patients find it difficult to choose a product because of manufacturer marketing tactics. Line extension is a popular marketing strategy used by pharmaceutical makers. Announcements of over-the-counter drugs and line extensions consume a significant portion of profit. Other goods are sold under the same brand extension once a company has established their identity. For instance, there are several line extensions for the main brand Tylenol *, such as Tylenol PM *, Tylenol Cold, and cough. Patients often become confused as a result of this. These line extensions frequently consist of several components, which adds to the complexity. Patients in these situations might benefit from a patient-druggist transaction in terms of decision-making.

OTC medicine selection by patients is often influenced by OTC announcements. However, if the announcements are deceptive, a case can be misinformed. The announcements focus on the drug's therapeutic benefits and provide little details on its contraindications and safety precautions. In this sense, a pharmacist may also provide insight into every facet of the medication, along with details on how to take over-the-counter medications safely.

Barriers for druggists to prevent OTC drug abuse:

Druggists and their apothecaries deal with a variety of issues when it comes to OTC abuse. OTC specific data are not well-organized, therefore it can be difficult to identify medicine-related issues. Druggists typically do not maintain any documentation or examiner case drug biographies for over-the-counter drug use, leaving a gap in the data required to formulate relevant consoling judgments.

If someone wanted to misuse an over-the-counter medication, they could probably get it from several apothecaries or pharmacies at different times. The Combat Methamphetamine Epidemic Act of 2005 (CMEA) was passed by the US civil government in response to the potential for specific abuse, particularly with regard to pseudoephedrine. The purpose of this act was to regulate the amount of pseudoephedrine that is available for purchase in US pharmacies. The goal of this act was to curb the unlawful use of methamphetamine, which may be made in large quantities with over-the-counter cough and cold treatment medications such as pseudoephedrine and ephedrine. The maximum amount of pseudoephedrine that may be purchased in a 30-day period is 9 g, according to the CMEA.

Furthermore, there have been many opportunities for abuse because druggists haven't taken the bold initiative to cover OTC drug use. Druggists are typically trespassed, and the constant high stress of tradition processing task also lessens implicit opportunities to exercise caution while handling pharmaceuticals. Moreover, neither the regulations governing drug distribution nor the qualifications for druggists nor drugstores themselves have been updated to reflect the possibility of abuse.

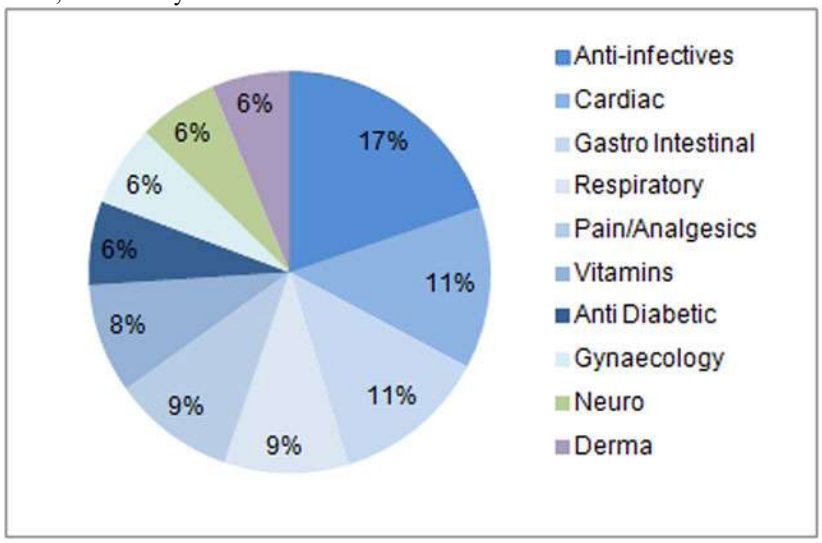
For example, a research carried out in a neighbourhood pharmacy revealed that druggists

were trespassing. The absence of a pool at a pharmacy resulted in less focus and issues

OTC drug abuse has been disregarded in favour of various strategies aimed at combating the abuse of traditional medications. Pharmacy take-back programs, medication monitoring systems, and professional drugstore programs like the American Druggists Association (APHA) have all gained attention in the past, while OTC drug abuse has received less attention.

Survey Analysis

Using a specifically created anonymous questionnaire consisting of forty6 closed questions (tables) and a brief statistics section, the survey was carried out between November and December of 2021. 70% of the cases, according to the check, used over-the-counter medications for common cold symptoms, body aches, fever, etc. It was noted that the COVID-19 outbreak caused a shortage of medications, including antipyretics, paracetamol, and other anaesthetics, as well as antihistamines, to treat moderate COVID symptoms including fever, colds, and coughs. It was also observed that certain individuals with diagnoses of anxiety, depression, and wakefulness frequently purchased various anodynes and soporifics in quantity, abusing them, by using out-of-date conventions.



CONCLUSION

This review of the OTC substance abuse literature shows that there are encyclopaedically honoured issues, including a variety of medicines and implicit detriment. Methodological enterprises have arisen regarding the use of surrogate, tone- reported, and on-OTC-specific data, and the relative lack of qualitative exploration on individual gests of OTC substance abuse. These represent critical areas of need for exploration. probe the compass of the problem, give perceptivity into the affected problem, and clarify the nature of the problem to be delved . This study is demanded to inform the programs, regulations, and amenability of numerous healthcare professionals to avoid detriment to those who buy OTC drugs that can be abused.

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