

Self Medication in Today's Generation without Knowledge as Self Inflicted Harm

Jayavel Kavitha¹, Sivagnanam Sivakrishnan^{2*}, Nagarajan Srinivasan²

¹Department of Periodontia, Government Dental College, Cuddalore, India. ²Department of Pharmacy, FEAT, Annamalai University, Annamalai Nagar, Chidambaram-608002, Tamilnadu, India.

Abstract

The simplest definition of self-medication is the use of drugs (medications) without a doctor's prescription. These drugs are sold in pharmacies and other shops and are referred to as 'Over the counter' or 'Non-prescription.' This phenomenon is rapidly evolving. People take medicines without a doctor's permission for many different reasons. During clinical consultations, some people want to cut down on the time and money they spend. Other people don't bother to see a doctor at all and self-medicate. Other things to think about could be personal issues, such as the fear of losing a job because of a diagnosed condition, mental illness, pain relief, sadness, or ignorance. Self-medication may seem like a good idea at first, but it's important to think about the risks. Self-medication can lead to drug addiction, allergies, habituation, disease worsening, the wrong diagnosis and dose, incapacity, and even death, so it's important not to do it. This is why you should never try to take your own medicine. In this study, the "seriousness" of self-medication is talked about. This review will help everyone who wants to avoid taking their own medicine.

Keywords: Self-medication, OTC, Side effects, Abuse, Habituation

INTRODUCTION

Self-medication is defined as the patient's use of medical goods to alleviate self-identified diseases or symptoms [1-4]. Responsible self-medication is when you use non-prescription, safe, and high-quality pharmaceutical goods [5] when you have problems that are easy to diagnose or when you have problems that have been previously diagnosed by a doctor. "The taking of medications, herbs, or home remedies on one's own initiative, or on the advice of another person, without seeing a doctor," according to the traditional definition of self-medication. As a sort of self-care for our health, self-medication is a common practice. Self-medication for minor injuries and illnesses is a popular practice in the United States that serves to lessen the overall strain on the healthcare system. A medicine should come with instructions on how to use it, possible side effects, monitoring, possible interactions, cautions, and the length of time it should be used. This is what the World Health Organization says is required for responsible self-medication. It's also important to note that in most countries, herbal medicines can be bought over the counter, used for self-medication, or sold as dietary supplements, functional foods, or dietary supplements [6]. This means that if they come with the right information, it could be a good example of responsible self-medication. When people try to treat more serious health problems, such as mental health problems, by themselves, there are many dangers and risks [7, 8]. Supplements and other substances, such as drugs and alcohol, are used by many people to try to deal with the symptoms

they are having instead of going to the doctor for a correct diagnosis and medical care. Method: This can make it difficult or impossible to treat symptoms or illnesses. It can also lead to new ones, like substance use disorders and addiction.

Main Reasons for Choosing Self-Medication

Self-medication with substances for mental health disorders is well recognized as having little effect in terms of treating the condition and may even worsen the symptoms. However, the normal explanation may not apply to someone who is self-medicating. There are a variety of reasons why someone would choose to self-medicate with substances to deal with the symptoms of mental illness. Although the actual reason is

Address for correspondence: Sivagnanam Sivakrishnan, Department of Pharmacy, FEAT, Annamalai University, Annamalai Nagar, Chidambaram-608002, Tamilnadu, India. sivacdm82@gmail.com

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non commercially, as long as the author is credited and the new creations are licensed under the identical terms.

How to cite this article: Kavitha J, Sivakrishnan S, Srinivasan N. Self Medication in Today's Generation without Knowledge as Self Inflicted Harm. Arch Pharm Pract. 2022;13(3):16-22. <https://doi.org/10.51847/PXyGs4x42h>

unique to each person's situation, there are a few typical factors that are widely accepted.

- Medical care costs, such as doctor visits and drugs
- Fear of seeking therapy because of unfavorable stereotypes
- Hiding or denying the existence of a medical condition
- Ineffective drugs used in the past for therapy
- quick access to medications
- An apprehension that does not negate the patient's desire to self-treat [9-12].
- The knowledge that he or she has dealt with identical symptoms before and understands how to address them.
- The fear of being informed it's a life-threatening sickness
- Concerns about pharmaceutical adverse effects

Others may find the logic behind someone's decision to self-medicate incomprehensible. It's crucial, though, not to dismiss their ideas. Compassionate intervention is critical when directing someone who is self-medicating as a strategy to cope with mental illness toward proper mental health therapy.

Self-Medication Hypothesis

In the 1980s, the self-medication hypothesis was presented as a potential explanation for how and why people become addicted to heroin and cocaine. Individuals learn the distinctive actions or effects of various substances, according to the hypothesis, and then utilize those substances to alleviate or change the symptoms or sensations they are experiencing. Someone suffering from anxiety, for example, would seek out alcohol for its relaxing and sedative properties. Although the self-medication theory appears intuitive, it has garnered conflicting evaluations from the medical profession, with acceptance and dismissal.

Whatever the reasons for someone suffering from a mental illness being drawn to substances, the link between mental illness and substance abuse disorders is obvious and has been a cause of concern for many years. The phrase "co-occurring disorder" is used when a person is diagnosed with both a mental health problem and a substance use disorder. According to the 2017 National Survey on Drug Use and Health, 8.5 million adults aged 18 and older who had substance use disorders also had an acute mental illness, while 3.1 million had co-occurring substance use disorders and serious mental illness.

Common Dangers of Teen Self-Medication

Everyone nowadays, from elementary school kids to senior adults, uses the Internet to investigate almost everything. Searching for health disorders that you may or may not have been a widespread usage of the Internet. Teenagers are especially vulnerable to the perils of self-diagnosing and self-medicating a wide range of physical and mental health disorders since they are usually highly familiar with search engines and have all of the information literally at their fingertips at any time of day or night. Furthermore, even

without the encouragement of increased information, their emotions of invincibility might lead kids to take needless and harmful risks when it comes to attempting to manage symptoms on their own [13]. Take a look at this list of risks associated with self-medication and discuss it with your teen. Self-medication can have more serious consequences, such as someone misusing prescription pharmaceuticals or turning to illegal narcotics as a coping method.

1. Inaccurate Diagnosis

This is an issue if your teen is utilizing Dr. Google to diagnose himself or herself with anything more serious than a normal cold. First, they may have a dangerous condition that they're dismissing as a simple rash, a little sore throat, or a muscle ache when, in reality, it's something that requires medical attention. Tell your kid to notify you as soon as any health issues arise; while mild symptoms are usually nothing to worry about, they may require a trip to the doctor, and this is something you must determine.

An Internet diagnosis, on the other hand, is more likely to make your teen fear that a minor headache or stomach illness is truly something far more dangerous, such as cancer. This can result in unnecessary worry and anxiety over a minor issue. Furthermore, it may encourage your teen to seek traditional or alternative remedies for a condition that they do not have.

2. Using the Wrong Medications

If you recently had migraines, a stomach ulcer, or another manageable ailment and still have some medication left over, your teen may be tempted to help himself or herself if they have a headache or nausea. The issue is that if the headache is caused by a sinus infection and the stomach illness is caused by a virus, those pills will not help and may potentially harm you. If you aren't using your prescription anymore, properly dispose of it to prevent your teen from utilizing it as self-medication in the future.

It's critical for your kid to come to you or another informed adult if he or she is experiencing pain or illness with more than moderate, typical symptoms so that the appropriate medication if any, can be prescribed. A basic headache or bug bite is simple enough for your teen to treat with an over-the-counter pain reliever or a dab of hydrocortisone cream, but if that doesn't work or the situation worsens, they should tell you rather than relying on someone else's prescription meds.

3. A Possible Overdose

Even though their body is the same size and weight as an adult's, your teen is not an adult. Some medications, both prescription and over-the-counter, are inappropriate for teenagers, while others must be given in lesser doses to children or individuals who have never taken the medication before. An adolescent searching through your medicine cabinet and selecting a pill to take for whatever condition he or she is experiencing may very quickly overdose.

Another issue with self-medication is that if the medication doesn't have the desired effect (either because it's the wrong prescription or because it's not something that would have an immediate effect), your teen may be tempted to take more the next time, which could lead to an overdose.

4. *Dangerous Complications from Mixing Medications*

When a doctor recommends a medication for you or another person, they make sure it won't conflict with anything else you're taking, whether it's over-the-counter, prescription, or herbal [14]. To avoid issues, your doctor will also inquire about your usage of alcohol and recreational drugs. Your pharmacist will double-check all of your prescriptions on file for possible interactions and contraindications as a precaution. Self-medication has the drawback of causing unanticipated and potentially hazardous interactions if your kid takes a medicine (or, worse, more than one medication) that was not prescribed for him or her.

For this reason, emphasize to your teen the necessity of never taking anybody else's medicines. There could be a hazardous reaction if your teenager takes someone else's prescription and then goes to a party and drinks a few beers. If your teen is mixing herbal medications, there is also the risk of response.

Expired Medication

All medications have an expiration date that signals when people should use them for maximum effectiveness and safety. In some cases of self-medication, a person may take an expired substance without realizing it, and this can lower the medication's potency and may increase the user's risk of an adverse reaction. Self-medicating with expired medicines can be dangerous and cause you to receive the incorrect dosage to manage your symptoms.

In more severe cases, some medications cause a chemical reaction as they expire, which can be dangerous if consumed. As a medication changes in chemical composition due to age, it may become hazardous and cause a higher risk of adverse effects or react poorly with other medications you are taking. Before taking any medication, you should consult with a doctor first and ensure that the medicine is within a safe date range.

Antibiotic Misuse

Antibiotics are beneficial for treating harmful bacteria in the body [15]. While these medications are very effective, you must take them under a medical professional's guidance. Systemic antibiotics in some pulpal and periapical conditions carry a risk of adverse effects and, additionally, are ineffective [16]. Misusing or overusing antibiotics can cause bacteria and microbes to grow resistant to these medications, meaning that antibiotics are no longer effective against these microbes.

Treating antibiotic-resistant bacteria requires a higher dose of more potent antibiotics. With chronic antibiotic overuse, these bacteria may even become resistant to the strongest antibiotic medications available. When bacteria fail to respond to antibiotics, they can multiply quickly. Misusing antibiotics can lower their effectiveness and increase your risk of medical complications.

Inaccurate Doses

When self-medicating, it is possible to take an incorrect dose. A lower amount can be less effective and not provide the proper relief and symptom management. On the other hand, accidentally taking too much medication increases the risk of a potential overdose, which is extremely dangerous and life-threatening. Inaccurate doses can also increase your chance of experiencing negative medication interactions or side effects.

An incorrect prescription medication dosage can be much more dangerous than traditional over-the-counter medications and can lead to prescription medication addiction. Prescription medicine is for treating severe illnesses and pain but misusing or taking improper amounts of any of these medications can be dangerous and increase your risk for medical complications, drug interactions, and even an accidental overdose.

Undiagnosed Medical Conditions

In some cases, you may have an underlying medical condition or disorder that can negatively react to the medication. Additionally, if you self-medicate to alleviate symptoms without consulting a doctor, you may be treating an underlying medical condition that you do not know you have. Without medical guidance, an undiagnosed medical condition may worsen over time and cause more severe symptoms or complications.

The Chance of Developing an Addiction

Another issue with self-medication is the chance of your kid acquiring a substance addiction if they take pharmaceuticals that are known to be addictive. This is a common occurrence; doctors frequently prescribe pain medication that patients do not require or use, allowing the tablets to sit in the medical cabinet in case symptoms recur. Adolescents suffering from an accident or other painful condition could unwittingly substitute these tablets for over-the-counter pain medicines and develop an addiction. In order to attain a high addiction, some youths would seek out pain relievers, tranquilizers, or anti-anxiety pills, unaware of how addictive these medications can be. It's crucial to talk to your kid about this hazard, whether or not you have these narcotics in the house, because his or her acquaintances could have tablets that you're unaware of. When discussing drug use and abuse with your children, you must also discuss the dangers of self-medication [17]. Taking care of your own medical requirements as an adult, which includes going to the doctor regularly and when you suspect you're having a physical or

mental health problem, is an important part of remaining well. Encourage your teen to take on this role without turning to self-diagnosis or trying other people's meds for problems they may or may not have; it's a skill that will come in handy as they grow older [18].

Self-Medication Drugs

In their regular use, self-medication medications are deemed safe [19] and are used to treat "minor" pathologies like pain, fever, constipation, coughing, asthenia, "sore throats," flu-like states, digestive aches, and "difficult digestion" [20, 21]. Antiseptic drugs were detected in 97 percent of houses, paracetamol in 91 percent, NSAIDs [22] in 68 percent, and anti-diarrhoeal drugs in 60 percent, according to French research of 247 patients seen in general practice and 104 GPs interviewed by mail [23]. Anti-tussive and phlebotropic medications, H1 antihistamines, anti-acids, and even sildenafil (and its by-products) and nasal decongestants were added to the list by Tillement and Delaveau [24]. These final two sorts of medications, which are generally only available with a prescription, are available through separate channels (the Internet). Of course, psychoactive medications (most notably hypnotic or tranquilizer benzodiazepines, as well as anti-depressants) can be added to this list of drugs re-used from the home pharmacy [25-35].

Self-Medication and Co-Occurring Disorders

Self-medicating mental illness is extremely dangerous, as this can exacerbate mental illness symptoms. Improper treatment of mental health disorders is extremely dangerous for the individual and can have a negative impact on how they interact with others. Depending on the mental health issue present, improper treatment raises the risk of self-harm or injury to others.

Self-medication is more likely in the following disorders:

- *Depression* is a mental disorder characterized by feelings of sadness, anger, or loss that are difficult to regulate and interfere with daily functioning. Because effective therapy from a skilled expert is a critical component of optimal treatment for depression, self-medicating depression may exacerbate symptoms. Depression symptoms, if not treated properly, can lead to serious feelings of self-harm or injury to others [36, 37].
- *Bipolar disorder* is a serious mental and psychological condition characterized by a wide range of moods, behavior, and emotions. Bipolar disorder should be treated by a trained healthcare expert who is looking out for the patient's best interests. Self-medicating bipolar disorder is unfortunately rather common, as people with bipolar disease frequently have co-occurring drug use problems, particularly alcoholism.
- *Anxiety and Stress* are common, but it can be difficult for people to recognize when their anxiety or stress levels require professional assistance. High blood pressure and an increased risk of stroke can be caused by underlying stress. Self-medication of anxiety, according to a 2006

study, increases the risk of mood and substance use disorders, as well as suicidal behavior. Self-medicating to deal with stress and anxiety is highly frequent, and it can be difficult to recognize when professional help is needed.

- *ADHD*: People with Attention-Deficit/Hyperactivity Disorder have problems paying attention and controlling their impulses. Because ADHD is most commonly diagnosed in adolescence the hazards of ADHD self-medication at such ages are substantial [38]. According to a study published in the American Journal of Addictions, more than a third of adolescents and young adults had no issues self-medicating their ADHD with cigarettes and other substances.
- *Trauma (PTSD)*: Self-medication is a common symptom of post-traumatic stress disorder, and it can lead to a variety of dangerous and catastrophic consequences [39]. According to one study, roughly 20% of people with PTSD use substances to help them cope with their symptoms. In order to help the individual, manage the symptoms connected with their trauma, PTSD treatment necessitates professional assistance and support.

Common Substances for Self-Medication

Self-medication is the deliberate use of particular behaviors, supplements, medications, or substances to alleviate self-identified symptoms. There are numerous self-medicating techniques, some of which are more useful and less hazardous than others. Regrettably, many individuals prefer to self-medicate using hazardous medications. Several dangerous methods or indulgences used to self-medicate include the following:

- *Prescription Medication*: People often misuse prescription medication to self-medicate. For example, someone experiencing pain or soreness may take a muscle relaxer or pain pill. While this may seem like a good idea, it can be hazardous. One of the dangers of self-medication is that when people regularly use these drugs without a doctor's supervision, they may become dependent on them and form an addiction to prescription medication.
- *Alcohol*: Because of its accessibility and widespread acceptance, self-medicating with alcohol is a prevalent habit. Alcohol can momentarily alleviate depression and anxiety symptoms; however, if consumed on a regular basis, it can lead to addiction and a worsening of melancholy and anxiety.
- *Opiates*, or opioids, are medications that mimic the effects of opium, a plant-based narcotic. Some of the most often used opiates include codeine, morphine, heroin, oxycodone, and hydrocodone. While opiates can generate a temporary euphoric sensation known as a "high," excessive use of these medications is exceedingly dangerous and can end in serious injury or death. Opioid use, which includes both heroin and prescription painkillers, accounted for two-thirds of all drug-related deaths globally in 2017, according to the United Nations' latest World Drug Report.

- *Marijuana*, often known as cannabis, is the most commonly used substance among persons suffering from depression, according to the United Nations. The evidence for marijuana's possible advantages in the treatment of various diseases is currently divided; nevertheless, self-medicating with marijuana in large amounts may worsen depression symptoms [40].
- *Stimulants*: Prescription stimulants, often known as amphetamines, are used to treat a variety of illnesses, including ADHD. Physicians prescribe and closely monitor these drugs. Amphetamine use for recreational purposes has a significant risk of addiction, can harm different organ systems, particularly the CVS, and can be fatal if mistreated. These medications may provide short relief from depression or ADHD symptoms; however, the perceived advantage fades fast, leaving a substantial risk of different side effects.
- *Food*: The behavior of self-medicating with food is usually referred to as "emotional eating," "binge eating," or "comfort eating." Self-medicating with food, according to a 2015 study, can briefly alleviate stress in adults who are not clinically depressed. However, regularly eating food to cope with melancholy can result in low self-esteem, exacerbate emotions of helplessness, and have a detrimental effect on physical health through unhealthy weight gain.

Risks of Self-Medication

Self-medicating can be dangerous and lead to several complications and poor health. Potential risks of self-medication include incorrectly self-diagnosing and taking the wrong medication. In some instances, dangerous drug interactions may occur due to incorrect dosage or medication misuse [41]. To minimize potential risks, always seek a medical professional to provide an accurate diagnosis and prescribe medication.

- *Side effects of self-medication*: A lot of medicines have their own set of side effects- some can be common, for example, some analgesics [42] can cause gastritis-like symptoms while some are rare. It is not possible to foresee or predict what effects might show up. This is especially true when it comes to antibiotics.
- *Substance misuse*: When you take a medication without consulting a doctor or medical professional, you might choose the wrong drug. Additionally, self-medicating increases your risk of taking an incorrect dose or using drugs for longer than necessary. When you take a medication without consulting a doctor or medical professional, you might choose the wrong drug.
- *Risk of abuse of medication*: Addiction and dependency on medication that is not prescribed by a doctor or when prescribed, if there has been no follow up or renewal can cause adverse effects. Commonly observed is the abuse of steroid medication for weight gain by young women who do not have complete information on what they are taking, which can progress to emergencies and complications like an adrenal crisis- which may need admission to an

intensive care unit. Antipsychotic medications are often abused and can sometimes lead to overdose. Antidepressants, when taken in overdose, can cause multiple complications such as unconsciousness, seizures, coma, and even death.

- *Misdiagnosis of a health condition*: It is important to consult a doctor to properly get your health condition diagnosed. There are over 10 conditions that may cause diarrhea commonly and not all of them to have the same line of treatment. Usage of antibiotics in diarrhea is very rampant, especially when mothers administer them to their children. Not only does it lead to worsening of the condition some antibiotics can be harmful and lead to unnecessary antibiotic resistance if not given in the proper dose.
- *Substance dependency*: If you take a substance for a prolonged period, your body may become dependent and need this substance to continue functioning correctly.
- *Masking a medical condition*: While you may think taking medication to alleviate symptoms is beneficial, it can often mask symptoms of an underlying medical condition. If you do not seek proper medical guidance, an underlying medical condition may worsen and become dangerous over time.
- *Drug interactions*: When you take multiple medications or combine medication with alcohol or substance use, you increase your risk of a negative drug interaction. There can be harmful interactions between different drugs if taken simultaneously. For example, a person on blood thinner medication for heart ailments should not take NSAIDs as they can cause bleeding and irreparable damage to the mucosa of the stomach. Additionally, taking alcohol while on aspirin can cause similar issues and lead to serious side effects like bloody vomiting. Drug-to-drug interactions are abundantly seen with medications that are taken for mental health conditions such as antipsychotic drugs or drugs taken for epilepsy. When doctors prescribe medication, they can ensure that this medication will react safely with any other medications you take regularly.
- *Medical complications*: Misusing or overusing medication can increase your risk for severe medical complications. Taking too much medication or an incorrect medication can cause harmful symptoms, including nausea, convulsions, and even death.
- *Increased risk in pregnant and breastfeeding women*: Not all medications are safe for pregnant and breastfeeding women. Self-medication can be harmful to the foetus in the former and can pass on via breast milk to a newborn in the case of the latter. Hence it is important to make sure a gynecologist is consulted before administration of any medicines.

CONCLUSION

Self-medication may appear to be a good idea at first glance, but it is important to examine the hazards associated with such foolish behavior. Take a look at this list of the dangers

of self-medicating. Self-medication can lead to more serious problems. You raise your chance of serious drug interaction when you take numerous prescriptions or combine medications with alcohol or other substances. Graduates and professionals should receive health education that emphasizes the dangers of antibiotic self-medication. Antibiotic resistance is a big concern that needs to be tackled as soon as possible.

ACKNOWLEDGMENTS: None

CONFLICT OF INTEREST: None

FINANCIAL SUPPORT: None

ETHICS STATEMENT: None

REFERENCES

- International Pharmaceutical Federation. Joint statement by the International Pharmaceutical Federation and The World Self-Medication Industry; 1999. Available from: <https://www.fip.org> (Accessed May 8th, 2021)
- Bowen D, Kisuule G, Ogasawara H, Siregar CJP, Williams GA, Hall C, et al. Guidelines for the Regulatory Assessment of Medicinal Products for use in Self-Medication. WHO/EDM/QSM/00.1, Geneva: World Health Organization. 2000.
- Awad A, Eltayeb I, Thalib L, Matowe L. Self-medication with antibiotics and antimalarials in the community of Khartoum State, Sudan. *J Pharm Pharm Sci*. 2005;8(2):326-31.
- WHO. Guidelines for the regulatory assessment of medicinal products for use in self-medication; 2000. Available from: <https://apps.who.int/medicinedocs/fr/d/Js2218e/> (Accessed May 6th, 2021).
- World Health Organization. The role of the pharmacist in self-care and self-medication. Report of the 4th WHO Consultative Group on the role of the pharmacist; 1998. Available from: <https://app.who.int/iris/bitstream/handle/10665/65> (Accessed 10th May 2021).
- WHO. Benefits and risks of self-medication. Geneva, WHO Drug Inf. 2000;14:1-2.
- Asia. Self-Care in the Context of Primary Health Care: Report of the Regional Consultation Bangkok, Thailand, 7-9 January 2009. World Health Organization, Regional Office for South-East Asia; 2009.
- Hughes CM, McElroy JC, Fleming GF. Benefits and Risks of Self Medication. *Drug Safety*. 2001;24(14):1027-37. doi:10.2165/00002018-200124140-00002
- Montastruc JL, Bagheri H, Geraud T, Lapeyre-Mestre M. Pharmacovigilance of self-medication. *Therapie*. 1997;52(2):105-10.
- Sailler L, Pugnet G, Montastruc JL. Self-medication. *Rev Prat*. 2012;62(10):1463-7.
- Montastruc JL, Bondon-Guitton E, Abadie D, Lacroix I, Berreni A, Pugnet G, et al. Pharmacovigilance, risks and adverse effects of self-medication. *Therapies*. 2016;71(2):257-62. doi:10.1016/j.therap.2016.02.012
- Fainzang S. The Other Side of Medicalization: Self-Medicalization and Self-Medication. *Cult Med Psychiatry*. 2013;37(3):488-504. doi:10.1007/s11013-013-9330-2
- Carney A, Liang K. Medication and substance use and misuse in the elderly. In: *Elder abuse 2020 Jan 1* (pp. 213-229). Academic Press. doi:10.1016/b978-0-12-815779-4.00010-0
- Amoako EP, Richardson-Campbell L, Kennedy-Malone L. Self-medication with over-the-counter drugs among elderly adults. *J Gerontol Nurs*. 2003;29(8):10-5. doi:10.3928/0098-9134-20030801-05
- Pandey A, Kumar S. Antibiotic activity of antimicrobial metabolites produced from soil microorganisms: an overview. *Int J Pharm Res Allied Sci*. 2015;4(4):28-32.
- Alanazi AM, Alawfi AH, Alrashidi EFA, Alazmi SEM, Alharbi BBG, Alhowaish KF, et al. An Overview on Antibiotics Use in Endodontic Management. *Pharmacophore*. 2021;12(6):10-4.
- Lessenger JE, Feinberg SD. Abuse of Prescription and Over-the-Counter Medications. *J Am Board Fam Med*. 2008;21(1):45-54. doi:10.3122/jabfm.2008.01.070071
- Rosenfeld S. Prevalence, associated factors, and misuse of medication in the elderly: a review. *Cad Saude Pública*. 2003;19(3):717-24. doi:10.1590/s0102-311x2003000300004
- Cranz H. Over-the-Counter Drugs. *Drug Saf*. 1990;5(Suppl 1):120-5. doi:10.2165/00002018-199000051-00019
- Caulin C, Cran H. Self-medication: Is regulation needed from whom. *Therapie*. 2000;55(4):547-53.
- Tarone RE, Blot WJ, McLaughlin JK. Nonselective Nonaspirin Nonsteroidal Anti-Inflammatory Drugs and Gastrointestinal Bleeding: Relative and Absolute Risk Estimates from Recent Epidemiologic Studies. *Am J Ther*. 2004;11(1):17-25. doi:10.1097/00045391-200401000-00007
- Farid M, El-Setouhy DA, El-Nabarawi MA, El-Bayomi T. Particle engineering/different film approaches for earlier absorption of meloxicam. *Drug Deliv*. 2016;23(7):2309-17.
- Bismuth M, Oustric S, Boyer P, Escourrou B, Brillac T, Mesthe P, et al. Family pharmacy: survey of a sample of patients in Midi-Pyrénées. *Therapies*. 2011;66(2):131-4. doi:10.2515/therapie/2011008
- Tillement JP, Delaveau P. Self-medication and safety. *Bull Acad Natl Med*. 2007;191(8):1517-26. doi:10.1016/s0001-4079(19)32901-2
- Bennadi D. Self-medication: A current challenge. *J Basic Clin Pharm*. 2014;5(1):19. doi:10.4103/0976-0105.128253
- Fainzang S. Managing Medicinal Risks in Self-Medication. *Drug Saf*. 2014;37(5):333-42. doi:10.1007/s40264-014-0153-z
- Fournier JP, Sommet A, Bourrel R, Oustric S, Pathak A, Lapeyre-Mestre M, et al. Non-steroidal anti-inflammatory drugs (NSAIDs) and hypertension treatment intensification: a population-based cohort study. *Eur J Clin Pharmacol*. 2012;68(11):1533-40. doi:10.1007/s00228-012-1283-9
- Berreni A, Montastruc F, Bondon-Guitton E, Rousseau V, Abadie D, Durrieu G, et al. Adverse drug reactions to self-medication: a study in a pharmacovigilance database. *Fundam Clin Pharmacol*. 2015;29(5):517-20. doi:10.1111/fcp.12140
- Garnier R, Castot A, Gervais P, Eftymiou ML, Fournier E. Neurotoxic effects of nasopharyngeal sympathomimetic vasoconstrictors. *Toxicol Lett*. 1983;18:107. doi:10.1016/0378-4274(83)90494-0
- Olivier P, Dugué A, Montastruc JL. Adverse cardiovascular and central neurologic reactions to sympathomimetics used as nasal decongestants: results of the French National Pharmacovigilance Survey. *Therapies*. 2003;58(4):361-6.
- Montastruc F, Montastruc G, Taudou MJ, Olivier-Abbal P, Montastruc JL, Bondon-Guitton E. Acute coronary syndrome after nasal spray of Oxymetazoline. *Chest*. 2014;146(6):e214-e5. doi:10.1378/chest.14-1873
- Queneau P, Chabot JM, Rajaona H, Boissier C, Grandmottet P. Iatrogénie observée en milieu hospitalier. À propos de 109 cas colligés à partir d'une enquête transversale de l'APNET. Analyse des causes et propositions de nouvelles mesures préventives. *Bull Acad Natl Med*. 1992;176(4):511-29.
- Montastruc F, Duguet C, Rousseau V, Bagheri H, Montastruc JL. Potentially inappropriate medications and adverse drug reactions in the elderly: a study in a Pharmacovigilance database. *Eur J Clin Pharmacol*. 2014;70(9):1123-7. doi:10.1007/s00228-014-1707-9
- Begaud B. Rates of Spontaneous Reporting of Adverse Drug Reactions in France. *J Am Med Assoc*. 2002;288(13):1588. doi:10.1001/jama.288.13.1588
- Ruiz M. Risks of Self-Medication Practices. *Curr Drug Saf*. 2010;5(4):315-23. doi:10.2174/157488610792245966
- Abdullah I, Hassan THA, Alhudaif AS, Bahkali MA, Aleid SB, AlSunbul MM, et al. Literature Review on Pathogenesis and Treatment of Depression. *Int J Pharm Res Allied Sci*. 2019;8(4):91-6.
- Babagi HF, Aljifri NM, Dali RS, Jan NS, Alqahtani LM, Abusrrah WM, et al. An overview on unipolar major depression in adults diagnosis and management approach. *Pharmacophore*. 2020;11(6):20-5.
- Sargazi S, Namani E. Effectiveness of cognitive-behavioral family therapy in clinical symptoms of children with attention deficit/hyperactivity disorder and family functioning. *Int J Pharm Res Allied Sci*. 2016;5(3):547-52.

39. Casteen EJ, Nielsen SR, Olson EA, Frederiks K, Rosso IM. Reexperiencing and anxious arousal symptoms in relation to volumes of thalamus nuclei in posttraumatic stress spectrum adults. *Brain Behav.* 2022;e2639. doi:10.1002/brb3.2639
40. Alghamdi AM, Samman OY, Bahader WK, Bakhsh TA, Altuwaylib SM, Haider MA, et al. Cannabinoid Acute Intoxication, Diagnosis, and Management. *Int J Pharm Res Allied Sci.* 2021;10(4):42-6. doi:10.51847/CKqshEif0Y
41. Chouhan K, Prasad SB. Self-medication and their consequences: A challenge to health professional. *Asian J Pharm Clin Res.* 2016;9(2):314-7.
42. Khezri MB, Zarin N, Hosseini SA. Comparing the impact of diclofenac sodium, hydrocortisone and a combination of both on pain management after elective caesarean section under spinal anesthesia. *Pharmacophore.* 2018;9(5):8-12.