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A Review on Prevalence, economic and Safety about over the counter drugs (OTC)

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Abstract

This review article focuses on two main topics: the use and impact of over-the-counter (OTC) medications, and the management of osteoarthritis (OA). For OTC medications, the article highlights their increasing prevalence and economic significance from 2020 to 2023. The prevalence of OTC medication usage rose significantly from 37.7% in 2020 to 85.4% in 2023, with a similar upward trend in economic impact, reaching 79.6% in 2023. The safety of these medications is compared with other agents, particularly multivitamins, which are deemed safer and more effective. The article examines a variety of OTC medications including those for colds, allergies, digestive issues, pain, and more, concluding that in 2023, OTC medications are not only more commonly used but also carry significant economic weight. It critically reviews various treatment options, advocating for a multidisciplinary and multimodal approach. This includes patient education, pharmaceuticals, alternative medicine, surgery, and physical therapy, among others. The article emphasizes the importance of early diagnosis, prevention, and a tailored treatment plan. It advocates for healthcare professionals to have a comprehensive understanding of OA management, stressing the importance of combining different therapies for optimal patient outcomes.

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INTRODUCTION

Prescription pharmaceuticals are not included in over-the-counter (OTC) medication options. It relieves pain, itches, fever, and headaches. Self-medication is the practice of taking medications on one's initiative or at the advice of a friend, relative, or other individual without first seeing a licensed healthcare provider [1]. Self-medication can assist in treating minor illnesses for which a doctor's consultation is not necessary, alleviating the burden on medical services, especially in

developing nations with little resources for healthcare.



Figure 1 OTC drugs

The taking of drugs, herbs, or home remedies on one's initiative, or on the advice of another person, without consulting a doctor" is the traditional definition of self-medication. More and more governments are promoting self-care, including self-medication, for minor ailments. It is possible to lower treatment costs, travel expenses, and physician consultation times by practicing responsible self-medication. Waste of resources, elevated pathogen resistance, and major health risks like adverse reactions and protracted suffering are the main issues associated with self-medication. Globally, antimicrobial resistance is an issue, especially in developing nations where antibiotics are freely accessible [3].

Although self-medication (SM) has become a crucial component of healthcare, its availability is still a major global concern, particularly in light of the COVID-19 pandemic. Inaccurate diagnosis, severe side effects, drug interactions, drug dependence, and microbial resistance are all possible outcomes of SM. Therefore, appropriate SM practices must be controlled and managed through the application of strict legislation and the involvement of policymakers and healthcare professionals [4].

The prevalence of using non-prescription drugs for self-medication is rising globally; estimates range from 11.2 to 93.7%, depending on the country and target population. In India, the range for lower- and middle-class groups was 8.3 to 92%. The increasing inclination to self-manage symptoms, rising costs in the healthcare system, and easy access to health-related information on

the internet and social media, as well as OTC drug advertisements and communications, are the main factors driving the rise in self-medication practices. Moreover, the most frequent justification for self-medication is thought to be the convenience of going to a pharmacy rather than a hospital [5].

OTC medications are considered to be reasonably safe and suitable for use without the guidance of medical professionals. They are available for purchase by consumers without a prescription. The WHO Anatomical Therapeutic Chemical (ATC) classification divides them into ten categories: cough and cold preparations, antacids, laxatives, antithrombotic agents, analgesics, antihistamines, dermatological, throat preparations, nasal preparations, and antidiarrheals [6].

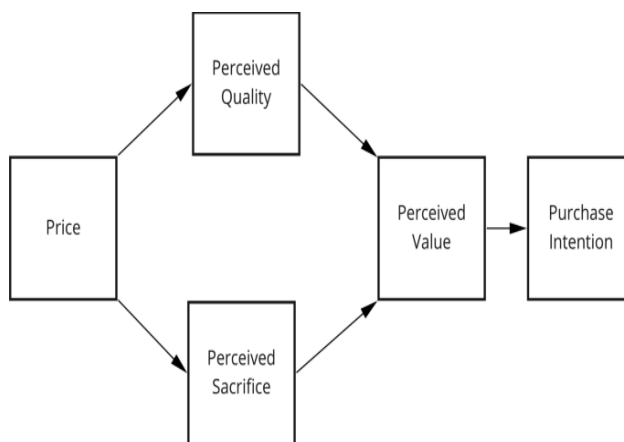


Figure 2 Original market cue-product evaluation model

Before the Food and Drug Administration (FDA) was established, almost anything could be put in a bottle and sold as medicine. The majority of drugs were accessible without a prescription. Certain over-the-counter products included substances such as alcohol, cocaine, marijuana, opium, narcotics, and psychotropic drugs without disclosing this information to the consumers. The 1938 Food, Drugs, and Cosmetic Act gave the FDA the authority to establish precise regulations governing which medications could only be obtained with a prescription and which could be sold over the counter [7].

Motives behind self-medication [8]

India, a nation with a sizable population, struggles with an unusually low doctor-to-patient ratio, which fosters an environment where

preference for over-the-counter medications can grow. Several specific explanations for the same can be found below:

1. Possessing an expensive prescription
2. Time-saving
3. Advice from family members
3. Exorbitant cost of medical visits
5. Congested brain centers
1. 6. Mistrust of medical professionals
2. 7. Nurse guidance
3. 8. A pharmacist's advice
4. 9. Ignorance, poverty, and false beliefs
5. 10. Prolonged advertising
6. 11. Drug availability outside of pharmacies
7. 12. Additional causes

SYMPTOMS

- Hot flashes and sweating
- Nausea and vomiting
- Dizziness or lack of coordination
- Paranoia or panic attacks

ADVERSE EFFECTS [9]

- Increased chance of stroke or heart attack
- Gastrointestinal issues
- Liver and kidney damage
- Dehydration, hallucinations
- Depression and anxiety.

Self-medication risk [10]

Self-medication carries numerous risks. The importance of dosage and medication usage, as well as pharmacology, are unknown to customers and pharmacy owners.

An incorrect therapy choice can occur even after a correct self-diagnosis.

The possibility of taking two medications at once or having negative drug interactions with concurrent use of other medications remains.

Additionally, there's a chance of administering medication the wrong way, like intramuscular rather than intravenous.

Along with using drugs for extended periods, self-dosing poses a significant risk of self-medication and increases the likelihood of future drug abuse and dependency.

A scarcity of medications for those in need of them for other illnesses.

OTC drug misuse during the COVID-19 pandemic in India

The act of selecting and administering drugs to treat symptoms that one diagnoses without consulting a physician is known as self-medication. The World Health Organization has classified this as one of the major issues facing both developed and developing nations. Self-medication and prescriptions have increased during the pandemic due to increased misinformation, a lack of prescribing doctors knowledgeable about disease pathology and the most recent evidence, and the added fear of an unidentified demonic disease. Up to 66% of people report getting drugs without a prescription. Self-medication undervalues illness incidence and prevalence. It affects institutional policies designed to lessen the diseases, particularly in a pandemic where contact tracing and prompt case documentation are essential [11].

Suitable use of over-the-counter medicine

- Prescription surveillance systems
- Raising awareness via electronic and news media
- Proper labeling
- OTC medication delivery and distribution
- Creation of a subcommittee to classify over-the-counter medications [12].

Transition of OTC and prescription drugs

In addition to being demonstrated to be reasonably safe and well tolerated, over-the-counter medications must be used primarily to treat conditions for which a doctor is not directly supervising the patient. While some areas allow the sale of OTC drugs like codeine, most other drugs must have little to no potential for abuse [13].

During a period of three to six years, prescription drugs that demonstrate their safety and suitability as OTC medications may eventually be converted back to prescription. Diphenhydramine, an antihistamine that was formerly only available with a prescription but is now sold over the counter almost everywhere, is an example of this. Cimetidine and loratadine in the US and ibuprofen in Australia are more recent examples.

Cross-border counseling

The term "over-the-counter counseling" describes advice given by a pharmacist regarding starting, changing, or discontinuing the use of an over-the-counter medication product. An evaluation of the patient's needs related to drugs and self-care concerns is necessary for OTC counseling. Prescription medications are one way that OTC counseling involves treating self-diagnosable conditions like heartburn, coughing, and rashes; expert diagnoses are also considered when making recommendations [14].

Impact on Societal Health

Over-the-counter (OTC) medications offer convenient, prompt treatment and relief for acute symptoms or minor illnesses. They also facilitate easier access to treatment options for common conditions. According to research, 81% of adults initially treat minor illnesses with over-the-counter (OTC) medications. Ninety-two percent of Americans who use over-the-counter (OTC) medications in a given year would seek alternative, probably more expensive, treatment elsewhere if OTCs were unavailable, according to a U.S. study that examined the seven most common acute and chronic, self-treatable conditions. If over-the-counter medications were unavailable, the rise in patients requesting prescriptions for ailments that can be self-treated would result in an increase in office visits, which would need the hiring of 56,000 more full-time medical staff members [15].

Views from Health Care Professionals

Doctors understand the significant role over-the-counter medications play in keeping patients comfortable and acting as a reliable first line of treatment for any minor illnesses. Seventy-five percent of primary care physicians in the United States said that if their patients had symptoms of allergies, pain, cough, cold, or acid reflux/upset stomach, they would first suggest an over-the-counter (OTC) product rather than a prescription medication. Understanding the advantages of over-the-counter medications also requires the involvement of pharmacists. They help patients by guiding them through the numerous product options and suggesting the best medication based on each person's unique requirements. When determining potential drug interactions between

over-the-counter (OTC) products and prescription drugs, foods, or dietary supplements, pharmacists can offer safety information [16].

Financial impact

Increased availability of over-the-counter medications not only benefits consumers by offering more choices, convenience, and access to care, but it also has demonstrable financial advantages. By eliminating needless doctor visits for ailments that can be treated at home, the use of over-the-counter (OTC) medications results in significant cost savings for both consumers and the healthcare system.

OTC medications are reasonably priced alternatives for patients, as indicated by the belief of 86% of respondents that using OTC medications reduces medical expenses.

According to research, consumers and taxpayers could save \$5.2 billion a year if they practiced greater self-care, which includes using over-the-counter medications and avoiding needless trips to primary care doctors [17].

METHODOLOGY

Eligibility Criteria

We included a systemic mini-review that reported the prevalence, economic, and safety of the over-the-counter drugs reviewed by reviewed articles. The factors and safety data from review articles were taken as eligibility criteria while most of the studies establish the percentage factors of OTC drugs [18].

Selection Process

According to the systemic review article first independently reviewed all review articles to get an idea about the prevalence, economic, and safety factors of OTC drugs.

After review the articles included the percentages of factors and safety about the OTC drugs. And finally, the review article is prepared and sent to a guide to rectify the mistakes in my mini-review article [19].

Data Analysis

The data was collected from review articles data analyzed by using kappa statistic models. The data about the prevalence, economics, and safety

of OTC drugs was analyzed by using figures. The data was selected as a percentage from review articles [20]. The data was shown in pie diagrams and tables.

RESULTS

Table 1 Determination of Prevalence Factor

S.No	Year	Author	Prevalence Factor %
1	2020	Nirma subashini	37.7%
2	2021	Ignacio rosety	49.1%
3	2022	Khalid a ai-kubaisi	57.5%
4	2023	Wuraola akande-sholabi	85.4%

Frequency of Prevalence Factor

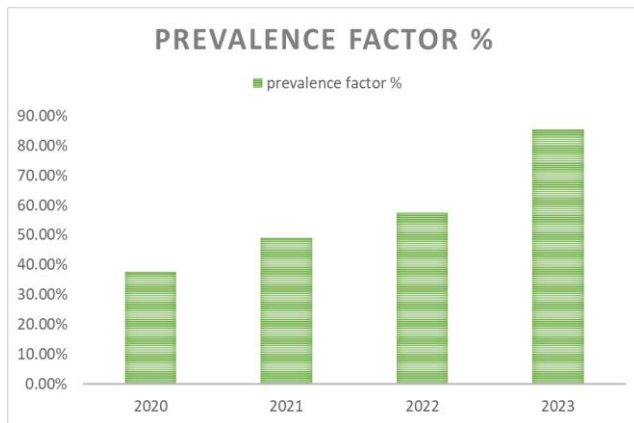


Figure 3 Prevalence Factor%

Frequency of Economic Factor of OTC Drugs

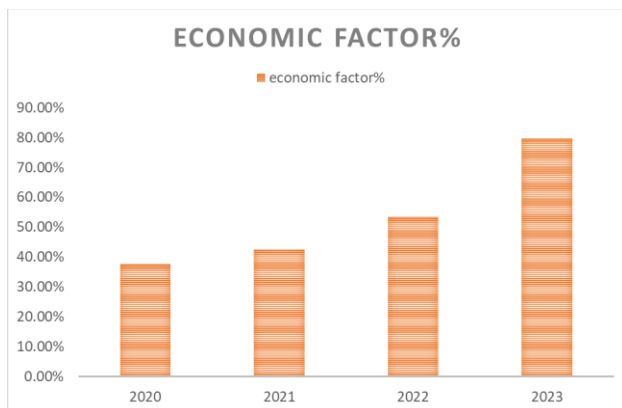


Figure 4 Economic Factor %

Table 2 Determination of Economic Factor

S.No	Year	Author	Economic Factor %
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1	2020	Lahiru udayanga	37.7%
2	2021	Sincenartchautrakarn	42.6%
3	2022	Liling chaw	53.4%
4	2023	Prashant narang	79.6%

Table 3 Determination of safety of OTC drugs

S.No	Year	Agents	Safety %
1		Head cold medicine	6.6
2		Laxative	6.2
3		Multivitamin	7.4
4		Antihistamine for allergies	6.8
5		Athlete's foot cream	7.2
6		Diaper rash cream for an infant	7.3
7	2023 & Jeffrey Gordon Taylor	Fever medicine for a child	6.4
8		Diarrhea medicine	6.6
9		Low back pain tablet	6.3
10		Cough syrup for a child	6.0
11		Cold sore ointment	7.2
12		Drops for an eye infection	6.8
13		Headache medicine	7.0
14		Cough syrup	6.5
15		Heartburn medicine	6.8

Frequency of Safety Of OTC Drugs

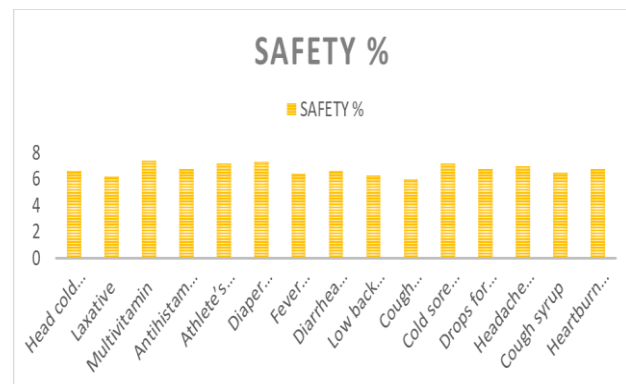


Figure 5 Safety %

DISCUSSION

According to the systemic mini review the results are determined by using the data from existing review articles about the prevalence, economic, and safety of OTC medication. The prevalence factors of OTC drugs are more prevalent in 2023 (85.4%) when compared to other years are 2020(37.7%), 2021(49.1%), and 2022 (57.5%).

The economic factors of OTC drugs are more prevalent in 2023 (79.6%) when compared to other years 2020 (37.7%), 2021 (42.6%), and 2022 (53.4%).

The safety factor of OTC drugs is safe in using multivitamins when compared to the other agents. The other agents are also safe but when compared to multivitamins they show more to the patient compliance.

The safety of multivitamins (7.4%), when compared to the other agents, are head cold medicine(6.6%), laxative (6.2%), an antihistamine for allergies(6.8%), athletes foot cream(7.2%), diaper rash cream for an infant (7.3%), fever medicine for a child (6.4%), diarrhea medicine (6.6%), low back pain tablet (6.3%), cough syrup for a child (6.0%), cold sore ointment (7.2%), drops for an eye infection(6.8%), headache medicine (7.0%), cough syrup (6.5%), heartburn medicine(6.8%).

CONCLUSION

The conclusion of this review article determined the OTC drug prevalence, economic factors, and safety percentage by using existing articles. The prevalence and economic factors of OTC medications are showing high in 2023 when compared to before years. The safety percentage of OTC drugs is showing more in multivitamin agents when compared to other agents in the 2023 existing article.

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