

Evaluating the Magnitude of Non-Prescribed Drug Dispensing and Self-Medication Behaviors: A Cross-Sectional Approach

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Abstract

Background: The objective of this paper is to provide insights into the availability of non-prescribed drugs and to explore the factors that influence their dispensing without a prescription, the self-medication habits of different age groups, and their knowledge of the possible risks associated with their use.

Methods: The research was conducted using a cross-sectional approach. Data was collected from several pharmacies concerning their non-prescribed drug sales and the reasons for dispensing them without a prescription. Moreover, a survey was administered to individuals from various age groups to assess their awareness of the risks of consuming non-prescribed medications.

Outcome: The findings from this study gave us a deeper insight into the extent of non-prescribed drug consumption and the main factors influencing such sales. As a result, it will be helpful to intervene in strategies to enhance regulation and raise public consciousness. Having a better understanding of the factors that contribute to non-prescription drug dispensing will assist in overcoming the challenges associated with it in terms of public health.

Conclusion: This study showed that more action and awareness are required to mitigate the potential risks associated with the use of non-prescribed drugs.

Keywords: Non-Prescribed Drugs, Self-Medication, Potential Risks, Pharmacy Drug Sales, Online Pharmacies

1. Introduction

The sale of prescription-only medicines without a valid prescription has become a common practice globally, particularly in countries with a sizable middle-class population, such as India. Earlier studies have indicated that the sale of prescription-only medicines without a prescription often exceeds 50% in many countries (2, 7).

Despite the existence of laws aimed at preventing the sale of prescription-only medicines without a prescription, it remains a common occurrence for such drugs to be sold in pharmacies without a doctor's order (6). This practice can lead to several harmful effects like adverse drug interaction, improper dosage, etc.

When individuals take prescription-only medicines without a prescription, they are unaware of potential drug interactions, which can result in adverse and even life-threatening consequences (13). Moreover, individuals may not be aware of the appropriate dosage for a particular medication, leading to the risk of overdose, which can prove to be fatal (4). Certain medications might be inappropriate for individuals with specific underlying health conditions, but without a prescription, this crucial information might be overlooked (5).

In India, the term "over-the-counter" (OTC) drugs does not have any legal recognition or definition under the Drugs and Cosmetics Act, 1940, and Rules, 1945. All drugs listed under Schedule H and Schedule X of the Drugs and Cosmetics Rules, 1945 are considered prescription drugs that legally require a valid prescription from a registered medical practitioner for their sale. This includes medications such as antibiotics, antidepressants, and sleeping pills (1, 14).

The study also examines the growing trends of self-medication and the rise of online pharmacies, both contributing to uncontrolled access to prescription-only medicines. Self-medication, the practice of taking drugs and diagnosing one's condition without consulting a

doctor, is on the rise (3, 5). The reasons for this range from the trivial, such as time-saving, to more serious issues like a lack of accessible healthcare facilities (10). Self-medication poses significant risks and is a growing concern. Many online pharmacies do not require a valid prescription for purchasing 'prescription-only medicines', which is another cause for concern and is further complicated by the lack of clear legal frameworks surrounding e-pharmacy operations in India (8, 9, 11, and 12).

This study seeks to highlight this pressing public health issue and address it by advocating for stricter regulations and enhanced oversight of medication dispensing without a prescription.

2. Material and Methods

2.1. Study Design and Study Area

This cross-sectional study aimed to assess the level of knowledge, attitudes, and dispensing of non-prescribed drugs. The cross-sectional study was conducted by administering a structured questionnaire in two phases. The first phase involved a survey among pharmacists regarding the dispensing of non-prescribed drugs. The second phase involved a survey among the general public regarding their knowledge of medicines. For the initial phase of the study, the research focused on several pharmacies located in the suburban region of Mumbai. In the second phase, the survey was distributed randomly to participants across different age groups.

2.2. Study Tool and Data Collection

The questionnaire was developed with consideration of similar ones used in previous studies⁵. The Phase I questionnaire was divided into three parts - the first focused on the participants' pharmacy sales and operations, the second explored their perspectives on why people purchase non-prescribed medications, and the third assessed their knowledge about the effects of non-prescribed drugs. In contrast, the Phase II questionnaire contained only two sections - one that inquired about the participants' practices, and another that evaluated their understanding of the harmful effects associated with non-prescribed drug use.

Google Forms were utilized to administer the survey, and the questionnaire was distributed through various social media platforms. At the start of the survey, the purpose of the study was communicated to the participants. Importantly, no data related to the participants' names, email addresses, or other identifying information was collected. This approach was intended to help the participants feel comfortable while responding and to ensure their anonymity was maintained throughout the process.

2.3. Data Analysis

The collected data was manually reviewed and coded to ensure accuracy and integrity.

3. Results

During the initial phase of the study, the researchers distributed the questionnaire to six pharmacies. Of these, four pharmacies responded, resulting in a response rate of 66.67%. The relatively lower response rate may have been due to the pharmacies' hesitation to disclose information about their sales of non-prescribed medications. In the second phase, the researchers circulated the questionnaire to members of the general public. While they estimated the number of recipients to be around 60-65 people, the exact number was unknown as the survey was distributed freely to the general public. This study focused on the broader population, in contrast to the targeted pharmacy sample in Phase I.

The study participants were drawn from a range of age groups. The majority, 63.5%, were between 18 and 25 years old. Another 15.4% were in the 25 to 45 age range, while the remaining 21.2% were 45 years of age or older.

During the initial phase of the study, all participating pharmacists unanimously reported that customers often seek to purchase medicines without a valid prescription. Furthermore, the pharmacists estimated that the range of total drug sales accounted for by these non-prescribed medications fell between 30% and 45%.

The most commonly cited reason for customers purchasing drugs without a prescription, as revealed through the Phase II survey, was due to their own prior experience with the medication or based on a recommendation from a relative, pharmacist, or other individual.

The study of participants for Phase I is presented in a tabular format in Table 1. Similarly, the data for Phase II is summarized in Table 2.

3.1. Attitude of pharmacist towards dispensing of non-prescribed drugs

The survey data indicates that purchasing medicines without a valid prescription is a widespread practice. On average, 37 out of every 100 purchases are conducted in the absence of a physician's order. The pharmacists surveyed identified two main reasons for dispensing medicines without a prescription: persistent customer demands for medication without a valid prescription and customers' claims of having used the requested medications before. Pharmacists believe that customers favor the acquisition of medicines without a prescription due to self-medication and their self-perceived familiarity with the pharmaceuticals they are consuming.

3.2. Pharmacists' Awareness of Potential Harms from OTC and Non-Prescribed Drugs

All the pharmacists participating in the survey demonstrated an awareness of the potential harms. However, a minority of pharmacists stated they would refuse to sell the medications without a prescription. This suggests most pharmacists have a relatively lenient attitude towards the sale of non-prescribed drugs, while a few maintain a more stringent, prescription-only policy. However, pharmacists also believe that taking medicines without a prescription is acceptable as long as the symptoms are mild and obvious.

3.3. Customer's Attitude Towards Purchasing Medicines Without Prescription

Observations of the survey data have revealed a concerning trend regarding the attitudes and behaviors of consumers towards the purchase of pharmaceutical products without a valid prescription. It has been noted that the general public has normalized and accepted the practice of acquiring medicines without a prescription. The primary reason behind this phenomenon appears to be the pre-existing knowledge or perceived familiarity that individuals possess regarding certain medications. However, further investigation revealed that despite claims of reading product labels, a majority of consumers are unable to get a basic understanding of the details and instructions about the use of such non-prescribed drugs. Moreover, it is observed that the population is aware of the legal regulations governing the sale of medicines without a prescription, as well as the potential risks associated with the self-administration of such products. A significant proportion, estimated at 66% of respondents, have expressed the belief that the sale of medicines should be restricted to prescription-only medicines.

3.4. Self-Medication: A Common Practice

According to the survey, almost half of the population occasionally engages in self-medication. The primary source of self-medication for many people is the endless information available on the internet, particularly Google. A significant portion of the population turns to online resources to research their symptoms and attempt to self-diagnose if not self-treat their conditions. People are unaware that self-medicating without proper medical guidance can be risky and potentially harmful. It can lead to incorrect diagnosis, improper treatment, and adverse drug interactions.

3.5. Rise of Online Pharmacies

Online pharmacies are gaining popularity, with more people becoming familiar with this practice. Many online pharmacies operate without requiring a valid prescription, which raises concerns. While awareness is increasing, the adoption rate is still relatively slow. Despite the growing trend, half of the respondents expressed uncertainty about buying medicine online, viewing it as an uncool or undesirable practice. This suggests that a substantial portion of the population is still reluctant to participate in online pharmacy transactions.

3.6. Purchasing Medications Based on available videos on social media platforms

Buying medication based solely on the recommendation of an online video is not a very common habit, the majority of the respondents showed negative responses to such practice. This is major because of a positive trend towards increased public awareness and education related to this matter.

Table 1: Data obtained after a survey of pharmacists

No.	Questions	Frequency (%)
1	Is a qualified pharmacist always available in the pharmacy?	Yes 75% No 25%
2	Do you always ask for a prescription?	Yes 25% No 75%
3	How often do customers come to buy medicines without a prescription?	Very frequently 0% Frequently 100% Occasionally 0% Rarely 0% Never 0%
4	Is there a list of drugs that can be sold without a prescription provided by the National Medical Commission (NMC)?	Yes 100% No 0%
5	When a customer requests a prescription drug without a prescription, what do you typically do?	Ask for a valid prescription signed by a doctor 50% Dispense the requested drug 25% Check the list provided by NMC 25%
6	As a pharmacist, do people ask you to prescribe them a medicine?	Yes 75% No 25%
7	Many prescription drug packages include a cautionary message printed on the back. Do you believe this message, which states 'Caution: It is dangerous to take this preparation except under medical supervision,' is an important warning for patients?"	Yes 100% No 0% Maybe 0%
8	Do you ever refuse to sell drugs without a valid prescription at your pharmacy?	Yes 50% No 0% Rarely 50%
9	Do you think OTC medicines are harmful?	Yes 50% No 25% Maybe 25%
10	What are the main reasons you may dispense a prescription drug without a valid prescription? (A Multiselect opinion question)	The patient insists they need the medication 100% Patient cannot afford to see a doctor 25% The patient has taken the medication before 100% The patient is experiencing severe symptoms 50%
11	What do you think are the main reasons patients request prescription drugs without a prescription? (A Multiselect opinion question)	Believe they know what medication they need 100% Avoid wait times to see a doctor 50% Avoid the cost of doctor visits 50% Prefer self-medicating 75%

12	In terms of percentage, can you tell me how much of your total drug sales are for medications dispensed without a valid prescription? (An open-ended percentage)	30% 45% 30% to 35% Around 40%
13	Would you like to share your thoughts to share on "Dispensing of drugs without a prescription"? (An open-ended text question)	Must be avoided but is fine when the symptoms are obvious and mild.

Table 2: Data obtained from the survey among the general public regarding their knowledge of medicines

No.	Questions	Frequency
1	Age group	18-25 25-45 45 or above
		64.2% 15.1% 20.8%
2	How often do you buy medicines without a prescription?	Very frequently Frequently Occasionally Rarely Never
		5.7% 22.6% 30.2% 30.2% 11.3%
3	Why do you buy medicines without a prescription?	Delay in getting a doctor's appointment Lack of access to healthcare service Recommendation from a pharmacist, salesperson, or relative Previous experience/knowledge of the medicine being purchased I never buy medicines without a prescription
		9.4% 5.7% 17% 52.8% 15.1%
4	Do you self-medicate yourself?	Yes No Sometimes
		20.8% 20.8% 58.5%
5	How often do you share your symptoms with a pharmacist to have them recommend a medicine?	Very frequently Frequently Occasionally Rarely Never
		5.7% 13.2% 24.5% 24.5% 32.1%
6	Do you believe in " Dr. Google "?	Yes No I don't believe but I always search for my symptoms.
		9.4% 47.2% 43.4%
7	Do you prefer using an online pharmacy?	Yes No In case of emergency
		20.8% 39.6% 39.6%
8	Do you think it's safe to buy medicine online without a prescription?	Yes No Maybe
		11.3% 54.7% 34%

9	If one of your relatives had a similar stomach pain to yours, and a tablet 'X' worked very well for relieving their pain, would you prefer to take that same medicine without first consulting your doctor?	Yes No Maybe	17% 47.2% 35.8%
10	Have you ever purchased a medicine simply because you saw a video about it on WhatsApp or received a recommendation from someone else, without consulting a healthcare professional first?	Yes No Maybe	11.3% 71.7% 17%
11	Have you ever thoroughly read the instructions and information provided on the packaging or labeling of a medicine before taking it?	Yes No Maybe	62.3% 18.9% 18.9%
12	Do you believe medicines should be made available for purchase without a prescription?	Yes No	34% 66%
13	Are you aware that it is illegal to sell prescription medicines without a valid prescription from a licensed healthcare provider?	Yes No	71.7% 28.3%
14	Are you aware of the potential side effects and risks associated with taking medicines, even those available without a prescription?	Yes No	81.8% 18.9%

4. Discussion

The study has shown that purchasing medicines without a prescription has become widespread, even though both the general public and pharmacies are very much aware of the associated risks. Even though the dangers of such behavior are well-known, the dispensing and purchasing of medicines without a prescription are not decreasing. One of the main aims of this study was to find the driving need behind buying prescription drugs without a prescription. The results have indicated that previous knowledge and suggestions from others are a significant driving force behind this trend.

The study has revealed a troubling finding - more than a quarter of the total sales in pharmacies are for non-prescribed medicines. This statistic highlights the widespread practice of purchasing medications without a proper medical prescription.

The gap between public awareness, legal requirements, and personal preferences shows that we need to do more to educate people and enforce the rules around getting medications without a prescription. The only way to address this issue is to improve both public awareness and behaviors, while also ensuring strict adherence to existing laws.

5. Limitations of the Study

The study was a cross-sectional design, meaning the results are inherently limited to the responses provided by the pharmacies. The accuracy of the data is dependent on the pharmacies' willingness to share their genuine answers to the questions. There is a risk of bias, as pharmacies may not have disclosed their true practices or experiences. Given these limitations, further studies are necessary to better understand the extent of medicines being sold without a prescription.

6. Conclusion

The study revealed that the dispensing and a procurement of non-prescribed medications is a widespread issue, highlighting the need for immediate action. There is a need to intervene in strategies to enhance regulation and raise public consciousness.

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