

## RESEARCH ARTICLE

### Drug dispensing practices in private pharmacies in Goa

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#### ABSTRACT

**Background:** In India, patients self-order both over-the-counter and prescription-only drugs in pharmacies, although the dispensing of the latter without a prescription is unlawful. Good pharmacy practice (GPP) guidelines have been framed and implemented in the country to help achieve standard practice. However, the quality of dispensing provided is inappropriate, especially in terms of counselling by the pharmacists at the time of dispensing. **Aims and Objectives:** This study was carried out to assess the drug dispensing practices in private pharmacies and provide data from the state of Goa. **Materials and Methods:** A questionnaire-based study was conducted among 101 pharmacists in the state of Goa and evaluated for various aspects of dispensing practices. **Results:** Dispensing without a prescription was 63.4% of the total dispensing encounters. Antihistamines and anti-cough medication, followed by non-steroidal anti-inflammatory drugs and antibiotics were the most commonly dispensed medications without a prescription. Only 18.8% pharmacists explained adverse effects of the drugs and 22.7% explained the dosage and frequency voluntarily while dispensing the medications. Storage and record maintenance also was not being followed as per GPP guidelines. **Conclusion:** This study revealed an inadequacy in the dispensing practices among the pharmacists in the state. While they are aware of the various schedules of drugs, they do not follow the record keeping as per the current regulations. Therefore, enforcing stringent laws and ensuring that they are followed is necessary along with educational programs for the pharmacists to promote rational drug use.

**KEY WORDS:** Dispensing Practices; Over-the-Counter Drugs; Generic Substitution; Pharmacy

#### INTRODUCTION

In many developing countries, including India, consumers tend to visit private pharmacies to avail medicines due to easy accessibility and credit facilities.<sup>[1]</sup> To avoid costs of visiting a doctor to treat minor ailments, many times consumers ask a pharmacist for their opinion or self-medicate and consume drugs.

Medications that can be bought from a pharmacy without a prescription are called “over-the-counter” (OTC) medications

or non-prescription medicines.<sup>[2]</sup> The use of OTC medications has been reported to be rising internationally, and India currently ranks 11<sup>th</sup> in the global OTC market.<sup>[3]</sup> Prescription drugs are those that fall under two schedules of the Drug and Cosmetic Rules 1945: Schedule H and Schedule X. Schedule H and X are drugs which can be sold only on the prescription of a registered medical practitioner. This legal requirement is made to prevent self-medication of drugs.<sup>[3]</sup> In India, patients self-order both OTC and prescription-only drugs, although the dispensing of the latter without a prescription is unlawful.<sup>[4]</sup> Despite regulations, in many developing countries, most medications are available without prescriptions.<sup>[5]</sup>

Various flaws can be observed in the current drug dispensing scenario which includes indiscriminate dispensing and dispensing of subtherapeutic quantities of antibacterials, as have been reported in the previous studies.<sup>[6]</sup> This could

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contribute to antibiotic resistance and is a problem that has to be dealt with. Good pharmacy practice (GPP) guidelines have been framed and implemented in India to achieve a standard practice.<sup>[7]</sup> However, the quality of dispensing provided seems to be way below the acceptable levels of “GPP.”<sup>[1]</sup> These guidelines state that the pharmacists have to provide professional counseling regarding the use of medicines, their side effects, and precautions, if any.<sup>[7]</sup>

In many cases, the patient and/or consumer and pharmacist interactions do not involve adequate medication-related counseling or advice that has to be given while dispensing. This may be due to time constraint, language barriers, and lack of interest on the part of the patient himself. Another problem is that of generic substitution which many pharmacists may be unaware of and is practiced. Prescription handling and checking for completeness and legitimacy of prescriptions can help prevent drug misuse and abuse, but many do not pay attention to checking for these details.

This study was conducted to assess the various dispensing practices in private pharmacies in the state of Goa and analyze if they are in accordance with the GPP guidelines.

## MATERIALS AND METHODS

A questionnaire-based study was undertaken from March to June 2017 after approval was obtained from Institutional Ethics Committee.

A total of 101 pharmacists were assessed in this study.

The questionnaire consisted of 17 questions.

Informed consent was taken in an attached form and participants were assured of anonymity to elicit unbiased answers.

The questionnaire was given to the chief pharmacist to complete, and in his non-availability, to the person in charge of dispensing [Table 1].

The questions were based on previous studies and were aimed at assessing the dispensing practices, storage practices, knowledge of the pharmacists, and counseling about various aspects of medication.

### Statistical Analysis

Data from the completed questionnaires were compiled and expressed in the form of percentages and frequencies.

## RESULTS

Dispensing without a prescription was 63.4% of the total dispensing encounters in a day.

**Table 1: Study questionnaire**

Q1: Number of dispensing encounters in a day: With prescription: Without prescription:
Q2: Which drugs are most commonly dispensed without prescriptions?
Q3: Do you know about Schedule H, Schedule H1, and Schedule X drugs?
Q4: Do you dispense on an older prescription? If yes, do you make a note of the dates when dispensed on the prescription itself?
Q5: Do you dispense an alternative brand in case of non-availability of prescribed brand?
Q6: If drug is prescribed in generic name, how do you decide which brand to dispense?
Q7: Do you insist on dispensing full course of antibiotics prescribed?
Q8: Do you counsel the patient to complete entire course of antibiotics?
Q9: Do you counsel patients about the possible adverse effects of the drugs? On request/voluntarily
Q10: Do you instruct patients about dosage and frequency of drug use? On request/voluntarily
Q11: Do you counsel the patient on adherence to long-term therapies such as antihypertensives and antidiabetes medication? On request/voluntarily
Q12: Do you instruct patients on how to use other dosage forms such as MDI, dry syrup, and transdermal patch? On request/voluntarily
Q13: Do you dispense drugs on prescriptions without a letterhead?
Q14: Do you check for completeness of prescriptions (dose/schedule)?
Q15: Do you check for expiry date before dispensing?
Q16: Do you have a refrigerator? What are the provisions for the refrigerated drugs in case of power failure?
Q17: Do you maintain an inventory? If yes: Manual/computerized

Anti-cough remedies and antihistamines (55.88%) and non-steroidal anti-inflammatory drugs (29.41%) were the most common drugs dispensed without a prescription, followed by antibiotics (5.8%).

All pharmacists were aware of Schedule H drugs.

39.6% dispensed drugs on an older prescription.

19.8% pharmacists advised and dispensed another brand on their own after informing patient, if the prescribed brand was not available.

If a drug was prescribed in generic name, 75.24% dispensed the brand that is most prescribed by other doctors.

18.8% pharmacists voluntarily explained adverse effects of the drugs to the patients while 22.7% voluntarily explained dosage and frequency.

8.9% pharmacists dispensed prescriptions without checking for the completeness of the prescriptions (such as signature and letterhead).

All checked for expiry of drugs before dispensing.

16.83% pharmacies did not have a refrigerator and among those that 30.95% had no power backup.

All pharmacies maintained an inventory, although 19.8% of these were manual.

## DISCUSSION

This study analyzed various dispensing practices which included prescription handling, patient counselling, storage, and inventory management in private pharmacies and evaluated if these were in accordance with the existing standard GPP guidelines.

The most important finding in this study was a high proportion of dispensing encounters without prescriptions. It was also documented that a high number of pharmacists dispensed refills on older prescriptions. Generic substitution is being practiced, and professional interactions with the consumers in terms of counseling about dosage and adverse effects are limited.

Pharmacists are the health professionals most accessible to the public, and their professional activities include ensuring an accurate supply of appropriate products, counseling of patients at the time of dispensing of prescription and non-prescription drugs, drug information to health professionals, patients and the general public, and participation in health-promotion programs.<sup>[8]</sup> Community pharmacists have a huge role in health-care management and they can positively influence health-care promotion.<sup>[9]</sup>

GPP guidelines have been prepared by the World Health Organization (WHO) and International Pharmaceutical Federation, to encourage all countries to develop pharmacy practice minimum standards.<sup>[10,11]</sup> It is recognized that pharmacy practice varies from country to country and between different areas within a country despite the existence of GPP guidelines by a recognized body.<sup>[11]</sup>

Various studies have been carried out in different parts of the world to evaluate the dispensing practices in their countries and also within India. Based on these, we carried out a similar study in the state of Goa.

A high proportion (63.4%) of dispensing encounters without prescriptions found in this study was similar to a study conducted in Bengaluru, India, where it was 45%<sup>[5]</sup> and also a study in Tamil Nadu, India, where 58%<sup>[12]</sup> of the pharmacists dispensed drugs without prescription but better than practices in other countries such as Egypt (72%),<sup>[13]</sup> Tanzania (77%),<sup>[14]</sup> and Vietnam (99%)<sup>[15]</sup> where higher rates of dispensing without prescriptions were documented.

In this study, it was observed that anti-cough and antihistaminics were the most commonly dispensed drugs without a prescription which was followed by analgesics and lastly antibiotics as illustrated in Figure 1. In a similar study conducted in Bengaluru,<sup>[5]</sup> analgesics, antipyretics, antacids, cold and cough remedies, vitamins, nutritional supplements, and antibiotics constituted the most commonly dispensed drugs without prescription, in that order. Similar patterns were also observed in the Egypt<sup>[13]</sup> and Tanzania studies.<sup>[14]</sup>

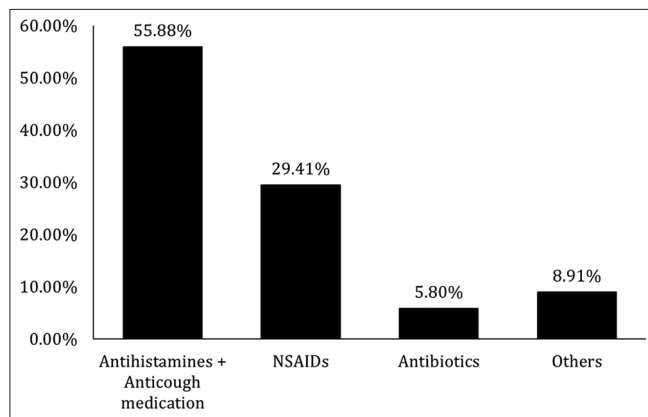
Antibiotic dispensing without a prescription was found to be relatively low in this study, as compared to a study in Saudi where almost all the pharmacists dispensed antibiotics without prescription.<sup>[16]</sup>

Analgesics and antipyretics are the most commonly used drugs for relief of fever, common aches, and pains. Analgesics such as ibuprofen and diclofenac are prescription drugs while most of the cold and cough remedies and all the antibiotics are Schedule H drugs.<sup>[5]</sup>

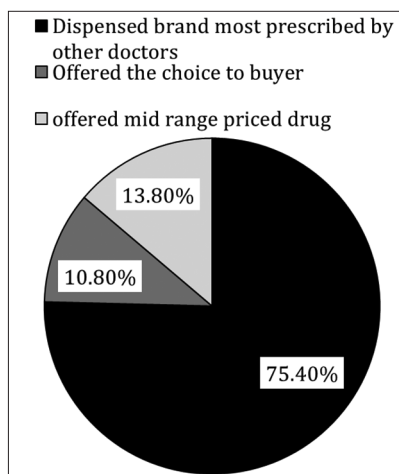
Schedule H drugs can be dispensed only against a valid prescription and Schedule X drugs need a prescription in duplicate, separate license requirement, and meticulous storage and dispensing records.<sup>[17]</sup> In this study, it was found that all pharmacists were aware of Schedule H and Schedule X drugs, but many of them continue dispensing drugs without a prescription and do not maintain patient records. The legislation for OTC and prescribed drugs supply are not fully implemented at pharmacies, and the documentation of patients' treatment is restricted to hospitals.<sup>[18]</sup>

In this study, it was found that 39.6% of the pharmacists dispensed drugs on older prescriptions as compared to a study done in Bengaluru, where it was 77%.<sup>[5]</sup> This could be due to no specific regulations in place regarding the duration of validity of a prescription in our country.<sup>[5]</sup> Refills with the same prescriptions may be more common with patients on long-term therapy such as antihypertensives or antidiabetes medication. This may prove to be a harmful practice as in case the patient needs to be given a lower dose of medication, or the medication needs to be discontinued, the patient may not visit the doctor since he receives refills with the same prescription over and over again.

Generic substitution is the mutual substitution of medicinal products having the same active ingredient, in the same dose and pharmaceutical form.<sup>[19]</sup> 19.8% pharmacists in this study advised and dispensed another brand on their own after informing patient, if the prescribed brand was not available. When asked how they choose the brand to dispense, 75.24% said they would dispense the brand prescribed by other doctors while 10.8% said they would offer the choice to the buyer as illustrated in Figure 2. In the Bengaluru study, 56% said they would dispense an alternative brand of the same drug in case of non-availability<sup>[5]</sup> of the brand prescribed,



**Figure 1:** Drugs dispensed without a prescription



**Figure 2:** Dispensing when drugs are prescribed in generic name

irrespective of which drug it was. While this may be done in good faith and to help the patients, it may be harmful, especially for drugs with a narrow therapeutic index and non-linear kinetics. No such guidelines on generic substitution are available in our country.

In this study, 18.8% pharmacists voluntarily explained adverse effects of the drugs to the patients while 22.7% voluntarily explained dosage and frequency. The rest of the pharmacists dispensed the drugs without any counseling or did so only on request. According to a study by Adepun and Nagavi, majority registered practicing community pharmacists in India behave as traders and lack of professional knowledge and training. To provide services such as patient counseling and drug-related information, a pharmacist needs to be qualified.<sup>[20]</sup>

Counseling enhances compliance and reduces complications due to non-compliance to treatment. This is especially helpful when patients are counseled about adherence to long-term therapy and completion of course of antibiotics, etc.

In a study on counseling by pharmacists, it was noted that 54% of community pharmacists felt that lack of time was the major problem or barrier faced during patient counseling, followed by lack of knowledge 28%, and lack of patient

interest 8%.<sup>[21]</sup> Another study by Mishra *et al.* suggested that the language was a major barrier.<sup>[22]</sup>

8.9% pharmacists in this study dispensed prescriptions without checking for the completeness of the prescriptions (such as signature and letterhead), and thus the legality and the legitimacy of the prescriptions can be questionable.

In a study on the extended role of community pharmacists on general practitioners, 54% respondents opined that pharmacists should check the legality of the prescriptions and identify possible drug interactions. Many pharmacists do not practice this. This could be due to inadequate therapeutic knowledge, lack of professional development programs, and more trade interest than professional responsibility.<sup>[20,23]</sup>

All the pharmacists checked for the expiry of medications before dispensing which is a good practice.

16.83% of all the pharmacies did not have a refrigerator, and among those that had a refrigerator, 30.95% did not have a power backup. As per GPP guidelines, pharmacies should be equipped with refrigerated storage facilities (validated from time to time) and should be available for products requiring storage at cold temperature.<sup>[7]</sup>

Maintaining an inventory, especially a computerized one, may contribute to efficient dispensing by reducing the dispensing time. In this study, we found that 80.2% of the pharmacies had a computerized inventory while 19.8% had manual inventory. According to the GPP guidelines, pharmacies should preferably be equipped with computers for inventory management.<sup>[7]</sup>

### Limitations

This was a questionnaire-based study and is thus liable to bias.

### CONCLUSION

This study shows that the GPP guidelines are not followed in many pharmacies and also emphasizes the need for training, and education of pharmacists to improve drug dispensing to promote rational drug use. Supervision and inspection of implementation of the GPP standards is necessary. Stringent regulations on scheduled drugs, drug refills, and generic substitution also need to be framed and implemented.

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