

## At a few selected community pharmacies in Addis Abeba, Ethiopia, community pharmacists adhere to logical dispensing procedures.

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### Abstract:

**Background:** A crucial factor for promoting the rational use of medications is the implementation of effective distribution practices. These practices involve providing the appropriate medication in a suitable form to the correct patient, at the right dosage and quantity, accompanied by clear instructions, and packaged in a way that maintains the drug's potency

**Objective:** to assess community pharmacists' adherence to rational dispensing practice at selected community pharmacies in Addis Ababa.

**Method:** A cross sectional study design was employed to assess the adherence of community pharmacists to rational prescribing practices. World Health organization prescribing standards was used to carry out face to face interview via close ended questionnaire.

**Result:** The study conducted on total of 12 pharmacies and 120 clients showed that all the selected pharmacies fulfilled the standard 100%. All have the needed materials with the appropriate environment, of the observed pharmacists the most frequently given information's was frequency and duration with percentages of 96.7% and 95% respectively. However important informations like side effect, precautions and contraindications were not given much emphasis only 9.2% informed about side effects, 10% about precautions and 21% about contraindications.

**Conclusion:** This study revealed that mere knowledge and skills related to our area of research are insufficient. While pharmacists appear to possess the essential qualifications, there are instances of negligence among them. Consequently, it is important to implement regular training and awareness programs, as such lapses can lead to adverse outcomes for clients and patients.

**Keywords:** *Community Pharmacists, Rational dispensing practice adherence, Addis Ababa.*

## 1 Introduction

**1.1 Background:** The World Health Organization (WHO) defines the rational use of medicine as ensuring that patients receive pharmaceuticals tailored to their needs, in doses that meet their specific requirements, for an adequate duration, and at the lowest possible cost for both themselves and their community. A critical component of promoting rational medication use is good dispensing practices (GDP), which involve delivering the correct medication in an effective form, at the right dosage and quantity, along with clear instructions, and in packaging that maintains the drug's potency. Dispensing encompasses accurately interpreting a prescription, preparing the medication with proper labeling for an individual, and then providing the medication to the patient. This process can take place in various settings and be conducted by individuals with different qualifications[2].

Several factors can contribute to the incorrect use of medicines, according to fact sheet from WHO more than 50% of all medicines are not correctly prescribed dispensed and sold; and more than

50% of patients take their drugs incorrectly. Again, this found to be worsened in developing countries with less than 40% of patients in the public sectors and less than 30% in the private sector being treated according to clinical guidelines[3].

The effective provision of rational pharmacological therapy relies significantly on proper dispensing practices, which follow established procedures. This process begins with interpreting the prescription, followed by the preparation and labeling of medications, providing advice and counseling, and ultimately delivering the medications to patients for use according to the instructions given. While the term "irrational dispensing practice" can encompass a variety of behaviors, research has identified that incorrect distribution, self-medication, and the use of subtherapeutic doses are primary factors contributing to irrational drug use in both developing and developed countries. Moreover, studies indicate that Ethiopia faces challenges not only with irrational dispensing practices but also with inadequate drug knowledge, leading to non-adherence. For instance, a study conducted at Jima University Specialized Hospital found that patients recalled only 39% of drug names, 79% of dosages, 89% of

treatment durations, and 76% of the reasons for their prescriptions[5].

The administration of reasonable pharmacological therapy depends on the practice of administering drugs.

It starts with prescription interpretation, continues with drug preparation and labeling, counseling and advising, hands over medications to patients for use as directed, and ends with the creation of the necessary records. According to several investigations from both industrialized and developing nations, improper dispensation, self-medication, and the use of subtherapeutic doses are key contributors to irrational drug use. The pharmacist's primary responsibilities for ensuring the safe and effective use of medications are patient counseling and dealing with drug-related issues [7].

According to the World Health Organization (WHO), more than half of all prescriptions for, sales of, and distribution of medications are incorrect. An important factor in the irrational use of drugs is the absence of strict laws, authorities to oversee drug usage, and cooperation among medical professionals [8].

Ethiopia experiences irrational dispensing practices just like any other emerging nation. Partially and even unprescribed, prescription-only medications are frequently dispensed. Other activities that reveal an unreasonable dispensing include charging patients unnecessarily high fees for the supplied items, inadequate patient counseling, insufficient compilation, and improper labeling of the dispensed things. The problem is exacerbated and made more difficult by the accessibility of illegal and fake medications in Ethiopia [9].

Therefore, illogical medicine dispensing results in subpar drug therapy, resource waste, higher treatment costs, increased risk of ADR, and the development of antibiotic resistance. In Ethiopia, irrational dispensing practices can be found everywhere. This isn't due to a lack of knowledge or skill; rather, it's a result of carelessness and a rush to get things done. This behavior is not limited to the pharmacy industry; rather, it can be said to be ingrained in many different areas. Because of its serious consequences, this issue must be properly handled [10].

The prevalent issue of irrational prescription practices has become a significant challenge for the pharmacy sector. This problem arises either from a knowledge gap or from a failure to utilize existing knowledge effectively. Developing countries, in particular, are grappling with these irrational practices. This cross-sectional study aims to address this issue, especially in Addis Ababa, and will provide valuable information to raise awareness among healthcare professionals. Ultimately, the results of this study will serve as a foundational reference for future research endeavors on similar topics.

## 2 Methods and Materials

### 2.1 Study area

This study was conducted in Addis Ababa the capital city of Ethiopia by selecting 12 retail pharmacies. those pharmacies were located in Adisugebiya, Shola, Sidistkilo, Piassa, Gergimebrathaile, Hayahulet, Aratkilo, Gerjiroba, stadium, Ledeta, Megenagna, Lafto.

### 2.2 Study period

The study was conducted from February to July 2022.

### 2.3 Study design

A cross sectional study design was conducted to assess the adherence of community pharmacists to rational dispensing practices.

### 2.4 Source population

All pharmacists working in the selected community pharmacies in Addis Ababa.

### 2.5 Study population

All pharmacists working in selected 12 retail pharmacies in Addis Ababa during the study period.

### 2.6 Inclusion and Exclusion criteria

#### 2.6.1 Inclusion criteria

All pharmacists working at the mentioned area.

#### 2.6.2 Exclusion criteria

Pharmacy technicians were not willing to respond to the interview.

### 2.7 Sample size

Since study populations was small that is total pharmacy of 12 and the study area population, they were included in the study exclusively.

### 2.8 Sampling technique

Since, the study area population is small no sampling Technique was used 12 retail pharmacies were selected by random sampling technique. All pharmacists working in those 12 pharmacies were included in the study.

### 2.9 Data collection procedure

Initially, the questionnaire was created in English and then translated into Amharic to accommodate respondents who may not speak English. However, the criteria for evaluating the pharmacists' performance were developed directly in English. Data collection took place from May 9 to May 15, 2022, conducted by the investigators at the selected pharmacies. The principal investigators subsequently reviewed the collected data for completeness and accuracy.

### 2.10 Data analysis procedure

The collected data was entered onto a computer and analyzed by using statistical package for the social science (SPSS) software version 23. Descriptive statistics was used for analysis and finding presented using tables.

### 2.11 Study variables

#### 2.11.1. Dependent variables

- Good dispensing practice

#### 2.11.2. Independent variables

- Qualification of dispenser, Service training, Work experience, Class of the drug, Ownership (private/public).
- Age of patient, Sex, Patient assessment.

### 2.12 Operational definition

#### 2.12.1 Rational dispensing practice:

The World Health Organization (WHO) defines rational use of medicine as "patients receiving medications appropriate to their needs, in doses that meet their own individual requirements, for an

adequate period of time, and at the lowest cost to them and their community

### 2.13 Ethical consideration

Ethical clearance was obtained from Alkan University College. The aim and objectives of the study was explained to the health facility before data collection and permission will be secured. The purpose of the study was explained to the study subjects and verbal consent was obtained before the data collection. Privacy and confidentiality was guaranteed, questionnaire was coded.

## 3. Result

### 3.1 Facilities and Dispensing aids

The study included a total of 12 pharmacies, all of which were found to be well-equipped, representing 100%. No facilities were

identified as having limitations. As illustrated in Table 5.1, nearly all (100%) had lockable cabinets, an adequate number of shelves, sufficient lighting, and all necessary components to comply with the standards. Regarding prescription dispensing, the current study indicated that only 41.7% of participants checked for a prescription before dispensing medications. In contrast, 58.3% dispensed medications upon request without verifying a prescription, even when the drugs were not classified as over-the-counter (OTC). (Table 1).

**Table 1:** Facilities and dispensing aids among the pharmacies in Addis Ababa

Facilities	Presence/absence	Percentage (%)
Lockable cabinet	Yes	100
Adequate number of shelves	Yes	100
Sufficient lightning	Yes	100
Cold storing facilities	Yes	100
Labeling materials	Yes	100
Packaging materials	Yes	100
Sufficient lightning	Yes	100
Dispensing with prescription	Yes	41.7
	No	58.3

### 3.3 Drug labeling information

As shown in table 3 the labeling paper is not properly used only 0.8 % wrote patient name and 10% wrote precaution. But for most cate duration and frequency got highest attention with 74.2% and 67.7% respectively (Table 2).

**Table 2:** Drug labeling information among the pharmacies in Addis Ababa

Information on the label	Response	frequency	percentage
Patient name on the label	Yes	1	0.8
	No	119	99.2
Frequency on the label	Yes	89	74.2
	No	31	25.8
Duration on the label	Yes	81	67.5
	No	39	32.5
Precaution on the label	Yes	12	10
	No	108	90

### 3.4 Patient counseling

Most pharmacists did not consider important information's like side effect drug handling precaution and contraindication. However, majority of the pharmacists tried focus on frequency and duration with percentage of 96.7% and 95% respectively. Again, drug food interaction was not the concern of many of them. As shown in table 4 huge percent did not give appropriate information (Table 3).

**Table 3:** Patient counseling among pharmacies in Addis Ababa.

Variable		Frequency	Percentage
Drug handling and storage	Yes	44	36.7
	No	76	63.3
Route of administration	Yes	7	5.8
	No	113	94.2
Frequency	Yes	116	96.7
	No	4	3.3
Duration	Yes	114	95
	No	6	6
Side effect	Yes	11	9.2
	No	109	90.8
Contraindication	Yes	21	17.5
	No	99	82.5
Drug food interaction	Yes	24	20
	No	96	80
Dosage	Yes	74	61.7
	No	46	38.3

### 3.5 Question asked by the pharmacists

Only 62.5% give or ask explanation about the disease, only 4.2% could recall or associate their drug with the disease. Of the participants only 26.7 asked about medication history, 11.7 informed about side effects and only 45.8 asked age while 46.7 asked for whom it is (Table 4).

**Table 1:** Client response about the dispensing practice among pharmacies in Addis Ababa

Question	Response category	Values		Total
		Frequency	Percentage	
Did they give explanation about the disease	Yes	75	62.5	120 ( 100% )
	No	45	37.5	
Did they tell you about the number of medicines you take clearly	No	25	20.5	120 ( 100% )
	Yes ( 1 )	62	51.7	
	Yes ( 2-6 )	32	26.7	
	Yes ( above 6 )	1	8	
If your answer is above 2 for question two did, they tell which drug is for which disease clearly	Yes	30	25.0	120 ( 100% )
	No	5	4.2	
Did they ask about medication history	Yes	32	26.7	120 ( 100% )
	No	88	73.3	
Did they tell enough explanation about side effect	Yes	14	11.7	120 ( 100% )
	No	106	88.3	
Did they give you information about allergy	Yes	14	11.7	120 ( 100% )
	No	106	88.3	

Was age asked	Yes	55	45.8	120 ( 100% )
	no	65	54.2	
Did they ask for whom it is	Yes	56	46.7	120 ( 100% )
	No	64	53.3	
Any other information given	Yes	40	33.3	120 ( 100% )
	No	80	60.7	

## 4. Discussion

The pharmacist is usually the final healthcare professional a patient interacts with before starting a medication. Additionally, patients often consult pharmacists multiple times between doctor visits. Consequently, it is essential for the pharmacist to provide comprehensive information during consultations, including details on how to take the medication, the duration of use, timing, proper storage, and potential side effects. This ensures that patients can use the medication safely and effectively. [18,19,20,21].

To ensure rational medication use, patients must receive drugs that are suitable for their clinical needs, in doses that adequately meet those needs, for a sufficient duration, and at the lowest possible cost to both themselves and their community. Consequently, the aim of the current study was to evaluate the prescription practices of community pharmacists in a specific neighborhood of Istanbul, focusing on the principles of sensible medication use. [21].

It was found in the study that almost all pharmacies are well equipped facility wise not only this but the environmental parameters like lightning and the like meet the standard. 100% had lockable cabinet, adequate number of shelves, sufficient lightning and cold storing facilities. This value is grater when compared to the study conducted in Mizan Aman, were only 93% had a cold storing facilities and adequate number of shelve.[17] This showed that no effort is needed in this area regarding facility and environmental standard. As there is nothing to do, only should the trend continue.

As found in this study 53.8% dispensed without prescription which is a high figure compared to the study held in Bangaru where 45% were without prescription.

In this study only 25% could recall the appropriate name of their drug which is somehow better as compared to the study conducted in Turkey, where 11% could recall [11]. This had a huge implication that either the pharmacists don't give appropriate information or, even if appropriate information is given clarification for patient understanding is not taken into consideration. This can be further explained from the data found in Ambo west Shewa Ethiopia, it indicates that out of total client only 225 were found to be knowledgeable about drug dispensed to them [16].

Generally, from this study it was inferred that many inappropriate activities are performed while dispensing. Most of which are not because of lack of knowledge or skill but due to negligence. Most pharmacist give the appropriate information if it was asked by the client but none give needed information with their own initiative. Only frequency and duration had huge attention, were 96.7%

informed about frequency and 95% informed about duration, the same trend was found from the study in Mizan Aman Ethiopia. The highest percentage of drug libeling information that were written by the pharmacists were frequency in 12 (80%) of the drugstore [17]. However, highly important details like warnings, contraindications, and adverse effects were simply left out, as was the case in the Mizan Aman trial. Only 3% of Saudi Arabian counselors were effective, according to a research [14]. Additionally, the majority of pharmacists prioritized drug dispensing over patient counseling.

## 5. Conclusion

This study reveals that, despite pharmacists possessing a high level of knowledge, skills, and experience, a notable prevalence of inappropriate dispensing practices persists, largely attributed to negligence. Pharmacists in this study inadequately informed patients about their medications, focusing only on frequency and duration while neglecting critical information such as side effects, drug-food interactions, contraindications, and guidelines for proper handling and storage. These shortcomings highlight a pressing need for improved pharmacy dispensing services. To mitigate these issues, regular training and awareness initiatives are essential, as such oversights can adversely impact patient safety. Furthermore, the Ministry of Health should implement robust policies that enable legal action against those who demonstrate negligence and fail to adhere to the ethical standards of the profession.

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