

SHORT COMMUNICATION article

Assessment of current community pharmacist labeling practice: A simulated client approaches

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Abstract: The labeling of medications includes the provision of information and instructions as well as a unique identity for the medical product. It is one of the most important sources of information for patients. Good labeling practice is critical to ensuring patients' safe and effective use of products. Misreading the label, insufficient data on the label, inappropriate labeling font, writing style, and placement on the dosage form can all have disastrous consequences. The objective of this study was to assess medication labeling practices among community pharmacists in Libya. A simulated client method (SCM) was used, and the study was carried out in the City of Zawia, where 146 local pharmacies were visited over three months for the investigation (January to March 2023). These visits were made at random, without the pharmacist's knowledge. The findings revealed that all dispensed drugs were not labeled, and none of the practicing pharmacists in any pharmacies visited displayed any drug label, printed or handwritten. The majority of pharmacists did not address or explain significant information to the patient in an effective manner, which led to inappropriate and harmful consumption of medications. The absence of dispensed drug labels reduces the patient's knowledge of the necessary information about the medicine, resulting in a treatment deficit or unsuccessful therapy. Thus, more effort should be made by health authorities to instruct pharmacists to use and work according to international labeling standards or to establish local labeling specifications.

Introduction

The dispensing process involves proper preparation and labeling of medicines for the patient. It is a crucial process for assuring rational use of drugs as a small mistake can lead to the wrong drug, wrong dose, and wrong advice [1, 2]. Drug use programs frequently focus their efforts on maintaining logical prescribing practices while neglecting the quality of drug delivery and patient drug understanding [3]. Health professionals have an important role in patient education and providing clear and safe information about drugs, ranging from their therapeutic and adverse effects to delivery times and routes. Failures in the dispensing process, which include proper labeling of drugs and patient counseling, mean that one of the last links in the safe use of drugs has been breached [4]. Labeling is a unique identity or name given to a medicine so that patients can identify the medicine and find it easier to use [1]. As envisaged in the International Pharmaceutical Federation

(FIP) Guidelines for Good Pharmacy Practice about the supply and use of medicines, all pharmacists should contribute to the Good Labelling of Prescribed Medicines (GLPM) [5]. Labelling is defined as written, printed, or graphical matter on any article or container which provides adequate and necessary information about the product. It includes any printed, stenciled marked, embossed or impressed text or graphic matter on the immediate container, the outer pack, and any other printed material supplied with the medicinal product [6]. Drug labels contain rich and comprehensive information about drug products, such as disease indications, target populations, drug-drug interactions, and adverse drug reactions (ADRs) [7].

All dispensed medicines are legally required to have a label before being provided to the consumer. The purposes of a label for a prescribed medicine are to describe and identify, to contribute to optimal therapeutic outcomes and to avoid medication errors, to achieve appropriate handling and storage, to allow the product to be traced if there are problems with the manufacturing, prescribing or dispensing process [8]. Further, many factors must be considered when writing dispensing labels, including patient literacy levels, age, the number of medicines dispensed, the format and organization of the medicines label, the complexity of dosing instructions, the precision with which dosing instructions are written, and the use of icons, graphics, and pictograms when writing prescription labels [9, 10]. Each type of dispensed medication, over-the-counter preparation (OTC), controlled preparations and injections have labeling requirements that must be provided during dispensing [8]. The standard for labeling dispensed medicines has been developed to guide the format and content of medicine-related information on the dispensed medicine label. This will help to ensure that all consumers - particularly those with low health literacy levels, can locate and understand the information about how to take their medicines safely and effectively [11]. The standard is intended for medical professionals who design labels by prescriptions, print and attach the labels to the primary pack and secondary packing of the manufacturer, and then offer them to customers at the time of dispensing. Pharmacists, pharmacy technicians, nurse practitioners, general practitioners, optometrists, and dentists are among those who can dispense medications [11]. The main elements of a dispensed medication label are the name of the preparation, quantity, instructions for the patient, the patient's name, the date of dispensing, and the name and address of the pharmacy. To guarantee safe pharmaceutical use, good medication labeling procedures are essential. One of the significant sources of pharmaceutical errors, according to numerous studies, is non-compliance with labeling regulations [12]. Despite the ongoing efforts by international safety organizations, medication errors associated with labeling and packaging are frequently reported [13].

Materials and methods

Study design and setting: A simulated client method (SCM) was used to assess the performance of pharmacists labeling practical situations without their knowledge. This strategy allows researchers to observe real behavior rather than depending on self-reports or perceptions. The study was done in the Libyan City of Zawia, on the country's western coast. 4th pharmacy students recruited and trained simulated clients to act as typical behaviors and concerns of pharmacy customers. To facilitate the collection of relevant data for analysis, a real prescription was utilized. The study was approved by the University of Zawia and three months for the investigation from January 2023 to March 2023. To avoid any observational bias or changes in pharmacist behavior, none of the pharmacists were informed about the study.

Community pharmacies visit: In total, 146 community pharmacies visit. These visits were conducted at random and without the pharmacists' knowledge. Real prescription with actual prescription format included a variety of medications was used. The medications were prescribed: prednisolone tablets (20.0 mg), azithromycin tablets (500 mg), and fucicort® cream.

Data collection: All labeling and dispensing aspects were observed during the interaction of simulated clients and pharmacy staff. It is documented in a structured data collection form using Google Forms. All medications purchased during the study's visits were evaluated for labeling adequacy. The form was created using a thorough review of the literature as well as the Institute for Safe Medication Practices (ISMP) guidelines for medication label design.

Data analysis: All the collected data were analyzed using descriptive statistics using Microsoft Excel 2016.

Results

Availability of dispensed medications label: None of the practicing pharmacists in any of the pharmacies visited presented any kind of medication label, whether printed or handwritten. Furthermore, pharmacists were limited to providing information on the medicine orally. In most cases, the information provided was incomplete compared to the information that should be written on the medication label. A minority of pharmacists wrote instructions on non-designated places on the original package. In addition, lines were employed to denote drug frequency rather than plain Arabic words. The information provided was evaluated in comparison to what should be included on the drug label as follows:

Assessment of information provided regarding label identification: All pharmacists ignored the key seven label identification elements. About half of pharmacists (45.89%) stated the drug's name verbally, whereas more than half of pharmacists (64.38%) mentioned the dosage form orally as well (**Table 1**).

Table 1: Information provided regarding label identification elements

| Labelling item | Frequency (n=146) | Data presentation manner | |
|----------------------|----------------------|---------------------------|---------------------|
| | | Verbal information (%) | Written data (%) |
| Name of patient | 0.0 | 0.0 | 0.0 |
| Name of medicine | 67 | 45.89 | |
| Generic name | 42 | 28.76 | 0.0 |
| Brand name | 25 | 12.32 | 0.0 |
| Dosage form | 94 | 64.38 | 0.0 |
| Strength of medicine | 0.0 | 0.0 | 0.0 |
| List of excipients | 0.0 | 0.0 | 0.0 |
| Data dispense | 0.0 | 0.0 | 0.0 |
| Reference number | 0.0 | 0.0 | 0.0 |
| Pharmacy detail | 0.0 | 0.0 | 0.0 |
| Prescribed detail | 0.0 | 0.0 | 0.0 |

Evaluations of information provided regarding label instructions for dispensed medicines: All pharmacists provided the duration of usage orally and in writing on the medicines outside packaging. All pharmacists stated the frequency of dosage with lines on the outside package. 30.0% of pharmacists dispense more than the prescribed quantity of prednisolone to the patient (**Table 2**).

Special instructions provided by the pharmacists: A minority of dispensers provided special instructions for the medication prescribed. The information was only presented verbally (**Table 3**).

Table 2: Information provided concerning drug use instruction

| Items | Frequency (n=146) | Information presentation manner | |
|--------------------------------------|----------------------|---------------------------------|-------------|
| | | Verbal (%) | Written (%) |
| Use of medicine | | | |
| Frequency | 146 | 100 | 100 (LINES) |
| Duration | 146 | 100 | 100 |
| Direction for taking medicine | | | |
| Before and after food | 124 | 84.9% | 84.0% |
| Total quantity in package | 00.0 | 00.0% | 00.0% |
| Any special storage instructions. | 00.0 | 00.0% | 00.0% |

Table 3: Special instructions provided by the pharmacists

| Instructions | Frequency | Percentage |
|--|-----------|------------|
| Never take prednisolone for more than 10 days | 23 | 15.75 |
| Cortisone should be taken in the morning | 08 | 05.47 |
| Not take azithromycin on an empty stomach | 07 | 04.79 |
| Antibiotics should be taken at the same time every day | 09 | 06.16 |

Discussion

Labeling for drugs that have been prescribed is crucial for informing consumers about medications and promoting safe medication usage. The key details a patient needs to take their medications safely and successfully must be included on the label of any medication that has been dispensed. Imperfect drug label information or design may lead to misinterpretation and medication errors [12]. Preferably, all dispensed medicine should be labeled with all therapeutic information important for communicating medicine-related information to consumers and ensuring the safe and effective use of the products by patients [12]. Unfortunately, the findings of this investigation revealed a serious breach of pharmacy practice guidelines by failing to provide any form of medicine label. Dispensing drugs without labels was the main problem identified. This is similar in some poor countries such as Ethiopia where the drug is commonly dispensed without a label, incomplete label, or illegible label [14]. The lack of a pharmaceutical label and poor delivery of the required information to the patient adequately were noticed in this study. This affects the use of the drug by the patient and increases the risk of medical errors. Many studies focused on safer prescription medicine dispensing labels explained that improving written communication on prescriptions and dispensing labels is critical and can reduce medication errors [2, 15]. The lack of knowledge and information by the patient about the dispensed drug leads to incorrect use which in turn results in loss of efficacy or occurrence of adverse effects [16]. The dispensed drugs were not labeled with their name, strength, and expiration date, despite being present on the original package. The labeling was not in a language that all patients understood. The crucial information (patient name, medication name, and dosage form) was only mentioned orally by all of the dispensers. This results in a greater potential for error than written orders do, and speech interpretation is already challenging due to dialect differences, unfamiliar drug names, and terminology [17]. In addition, the ease of forgotten the information mentioned is because verbal communication lacks a record and can be easily forgotten by the receiver [18]. Written information is readily remembered, which leads to higher treatment adherence [18]. Furthermore, lines were employed to denote frequency rather than plain Arabic words, which can be confusing. All the dispenser writing was on the outer original package of the drug product, which covers some information on the original package for those who can read and understand the language in which it was written. The majority of pharmacists wrote medicine use instructions on the tablet strip; which is not a suitable place for writing and may not be clear. As was shown in this study, all pharmacists ignored the patient's name, the medication's strength, a list of excipients, the reference number, the data dispensed, the

pharmacy details and the prescription details. The patient's name and pharmacy information are crucial for guaranteeing correct care during dispensing and enhancing patient understanding. Lack of access to this information reduces patient awareness and compromises safety and effectiveness. It could lead to improper use and non-adherence, which could result in treatment failure and endanger the patient's health [19].

Poor communication with the patient was noticeable; the pharmacist did not care about how to communicate with the patient after dispensing the medicine in the event of any consultations or the appearance of side effects. The importance of a pharmacy contact number can be used to make an inquiry, make a complaint, or report a side effect [20]. About 30.0% of pharmacists dispense over the prescribed quantity of prednisolone tablets, these medicines often end up accumulating in people's homes, where they can cause safety issues such as accidental or intentional overdoses or the use of expired medicines that may no longer be effective. If medicines are improperly disposed of, they can also cause environmental pollution [21]. Auxiliary labels are supplementary to a prescription label, providing extra information to the patient to ensure that the administration, use, and storage of that medicine are done in a way that minimizes any harm to the patient and their medicines, [22] a minority of pharmacists indicated that prednisolone should never be taken for more than 10 days, and antibiotics should be taken at the same time every day, these results in failure to comply with the prescribed duration and timing of taking the medication. Many investigations have found that the current pharmaceutical labeling methods are a major issue [23]. A study conducted in October 2013 about current practices for labeling medications in hospitals in Riyadh, Saudi Arabia, showed that adhering to the label design guidelines for medications used in hospitals is crucial to ensuring the safe use of medications [12]. A Pakistani study found that hospital pharmacies' labeling practices were inadequate [1]. In Malaysia, a study revealed that the majority of the dispensed medications were not labeled according to regulatory requirements, it revealed that most of the community pharmacists provided insufficient and confusing information on the dispensed medication labels and did not adhere to the current laws and regulations [24].

Conclusion: This study identified pharmacist's failure to provide medication labels and the insufficient data provided. The consequences of this problem include decreased drug safety and efficacy, improper use of drugs, and decreased patient knowledge. Health authorities should make more efforts to create specialized training programs and offer labeling standards for the medications that can be prescribed at any healthcare facility.

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