

## Pharmacist as Doctor's Assistant – Prescription Less Drug Dispensation in An Urban Setting

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### Abstract

Dispensing quality and chemists' depth of expertise were evaluated in a descriptive cross-sectional survey of 206 independent drugstores. In September 2011 and April 2012, researchers in Dar es Salaam, Tanzania, gathered their data. The proficiency of drug dispensers handling controlled substances was evaluated using a patient simulator (mystery shopper) technique. A seven-day supply of metronidazole pills was purchased from each pharmacy and used to evaluate dispensing competence. Focus groups and one-on-one interviews were used to evaluate the drug dispensers' expertise in the area of distributing prescription-only medications. The most majority (70.4%), however, did not have any formal pharmaceutical training. Skills in dispensing were either very poor (25.7% of those surveyed) or quite high (70.4%). The majority of chemists and other medical professionals surveyed (11.4%) reported having just a moderate or low degree of awareness regarding distributing 'prescription only' medications. These results support the need for the National the Pharmacy Council to institute measures to guarantee that only properly educated chemists are responsible for dispensing prescription drugs. Strengthening the competence of drug distributors also requires an emphasis on on-the-job training and ongoing professional development.

**Keywords:** Dispensing, knowledge, prescription only medicines, drug dispensers, pharmacy

### Introduction:

Many writers have used the term "irrational" to characterise the prescription and distribution of sub-optimal or even dangerous pharmaceutical items in developing nations . Difficulties in assuring ongoing supply of important pharmaceuticals, inadequate funding for healthcare, and a lack of educated workers are only a few of the many contributing issues. Health beliefs or cultural traditions around their usage are another barrier, along with a lack of regulatory enforcement, a high incidence of counterfeit goods, access to accurate drug information, the high cost of pharmaceuticals, and the high cost to people. Another major

roadblock to reducing drug abuse is inadequate or nonexistent national drug policy. However, drug rules can only be successful if the means of execution are in position, such as a reliable distribution network, consistent oversight, and secure storage areas for drugs.

"Patients getting medications suitable to their medical needs, in quantities that meet their particular specific needs, for a sufficient amount of time, and at a price that is affordable to them and the community" (Geneva, 2003), as stated by the World Health Organisation (WHO). Adequate dosing for the shortest possible time and the fewest possible refills are hallmarks of rational medication usage . When

the World Health Organisation (WHO) developed the Essential Drugs Programme (EDP) in the early 1990s, the Tanzanian Minister of Health was one of the handful Ministries in the world to adopt it. The goal was to promote responsible drug use by medical professionals.

About 700 chemists, 550 technicians and 600 helpers are now licenced to practise in Tanzania. In 2004, there were about 6,000 pharmacies in operation throughout the nation (Dar es Salaam, 2004). This suggests that there is an insufficient number of properly qualified pharmaceutical professionals to man retail pharmacies. Public healthcare institutions including clinics, health departments, and dispensaries are managed by the government. Hospital pharmacies often have pharmacists in charge, with help from pharmacy technicians, pharmacy assistants, and other medication dispensers.

Both freestanding pharmacies and pharmacies housed inside hospitals must have at least as many employees in the business community (including for-profit businesses, NGOs, and religious institutions) as they have in the public service. Part I and Part II pharmacies are the two primary categories in the private market of the pharmaceutical industry. A pharmacy team consists of the pharmacist, the pharmacy assistant, and the pharmacy technician. On the contrary hand, a pharmacy that carries Schedule-II substances.

Medications, particularly those requiring a prescription, should ideally be dispensed by a chemist. Most emerging nations, however, have not experienced this (Cederlof C, Tomson, 1995). Numerous studies have shown that the vast majority of dispensers lack any formal education or experience in the pharmaceutical industry (Kamat & Nichter, 1984). Community pharmacies thus employ just a small number of pharmacists and rely on

inexperienced staff members to handle dispensing. Waako et al. (2009) found that giving untrained dispensers discretion over patients' medication increased the likelihood of illogical dispensing and decreased the likelihood of successful treatment adherence. The major repercussions of these effects include the development of multiple resistance to drugs, fatalities due to toxicity, unanticipated adverse effects and interactions of drugs, failed treatments due to poor patient adherence due to inaccurate information, and higher treatment costs for individuals and communities. There is no data on how widespread this issue is in Tanzania.

It is safe to infer that untrained workers known as "dispensers" manage and monitor Tanzania's proliferating drug shops because of the country's severe lack of skilled drug dispensing professionals. In spite of the fact that this increases access to medications for numerous individuals, it severely undermines the quality, effectiveness, and safety of pharmaceuticals, which are the cornerstones of pharmaceutical treatment (Matowe et al., 2008). Therefore, it is necessary to oversee the pharmaceutical industry and ensure that druggists have enough education and training.

### **Materials and Methods**

The chemists' expertise was evaluated by FGDs and in-depth interviews with pre-designed questions. From the proper agencies, we were able to receive a list of retail pharmacies serving the local population. An undercover investigator shopped at 206 pharmacies and spoke with staff members about their experiences there. The pharmacies were chosen via a stratified random sampling.

A checklist was used to collect data from each pharmacy's dispensary using dummy customers (Kamuhabwa & Ramji, 2011). Structured questionnaires and focus group discussions (FGDs) were used to obtain additional data

from community pharmacy medication dispensers to evaluate their level of expertise. Most underdeveloped nations are seriously impacted by malaria and other microbiological illnesses. Therefore, in the private retail community pharmacies, antimalarial and antibacterial pharmaceuticals are the most usually supplied prescription only medicines. The antibiotics amoxicillin and metronidazole are often used for treating infections of the respiratory and digestive systems, respectively. These three medications used as "tracer drugs" to test the chemists' abilities.

**Comparative Analysis of Dispensing Skills:** Secret customers with prescriptions for all three tracers visited local pharmacies. They contacted the pharmacist for details on dosage, frequency, adverse reactions, medication interactions, and more. They followed up by asking to purchase the recommended seven-day supply of metronidazole. Patients were asked to fill in a survey about their pharmacy experience after they left, with questions aimed at gauging the pharmacists' competence in areas like prescription drug interpretation, follow-up instructions, and proper packaging and labelling. Based on the total points earned from completing the checklist, an initial average competence score was determined. The competence of the drug distributors was evaluated, and then ranked as either poor (1-2), adequate (2-4), or excellent (4-5).

Dispensers' familiarity with drug-drug interactions, resistance to medications in bacteria and malaria parasites, reactions to drugs, the significance of communication, and the interpretation of prescriptions was explored using a qualitative approach with FGDs. Thirty pharmacy dispensers participated in the FGDs. There were a total of three FGDs, with ten dispensers in each. Both pharmacists and non-pharmacists working in private retail neighbourhood pharmacies were among the

drug dispensers chosen for FGDs. Muhimbili College of Health and Allied Sciences hosted the FGDs. Focus groups were overseen by a social scientist who used a guided approach with probes tailored to the study's goals. There were guided talks that were recorded. The primary goal of the FGDs was to spot problems with the current method of delivering Rx drugs and to suggest ways to fix them.

**Discussion of Results Obtained in Field Study :** A total of 206 medicine dispensers in retail and community pharmacies had their dispensing abilities evaluated using simulated consumers. Of those 61 people, 21 were pharmacists, 31 were pharmacy technicians, and 9 were pharmacy assistants, for a total of 29.6 percent with some kind of pharmaceutical training. Seventy-one percent of the workforce did not have a background in pharmaceuticals; this included nine clinical officers, one hundred and thirteen nurses, and twenty-three salespeople.

Questionnaires were used to survey 185 druggists about their experience with administering prescription drugs. Only 56 (30.2%) had formal pharmaceutical training (18 chemists, 30 technicians, and 8 helpers), while the remaining 129 (69.7%) did not.

Many druggists have complained that pharmacies often lack private spaces for counselling patients and customers. Dispensers of prescription drugs have complained that their employers don't provide them enough time or money to participate in continuing education opportunities like short courses as well as additional forms of training. Drug dispensers' access to up-to-date information on medications and illnesses was also cited as a barrier to their professional development.

Prescribers writing illegible prescriptions and failing to communicate effectively with chemists were other sources of difficulty. Some pharmacies choose to make the corrections

necessary to fix evident prescription mistakes, while others send patients back to their doctors for further instruction. Patients have to wait longer while their doctors make necessary changes to prescriptions or offer additional instructions to chemists.

**Salient Features of Urban Dispensing :** This study's results suggest that most drug dispensers in retail community pharmacies lack the expertise and training to provide patients correct advice on dosing, interactions, side effects, adherence, and storage. Inappropriate administration of controlled substances by unqualified employees has been linked to patient noncompliance and adverse outcomes (Awad, Ball, Eltayeb, 2007). Treatment failures, higher expenditures for individuals and society as a whole, and the development of resistance to various drugs are all possible outcomes of this situation (Hardon & Le Grand, 1993).

Most medication distributors are not trained chemists, which may explain why they have so little experience with distributing controlled substances like antibiotics and antidepressants. Medication dispensing requires the oversight of a licenced chemist to ensure compliance with the law. This research suggests that this rule is not being strictly adhered to, which leads to inadequate pharmacy oversight.

Most druggists were found to have just rudimentary knowledge on how to distribute controlled substances. Dispensers also have low levels of expertise when it comes to the safe and effective home use of medications, including packaging, labelling, and patient education. Another area where chemists might improve is in advising patients on how to deal with side effects, drug interactions, and how to stay on their medication. These results are consistent with those of a previous research (Minzi and Haule, 2008) that found that dispensers at private pharmacies in Dar es

Salaam lacked the competence to provide patients correct information on dose and adverse effects for antimalarial medicines.

The advice offered by drugstore clerks about how much metronidazole to take each day was a big cause for alarm. A patient was told to take two pills in the morning, afternoon, and night. That's why we split our daily intake into two 12-hour sessions instead of one 24-hour one. This is clearly the primary reason why antibiotic resistance is on the rise among microorganisms . In addition, chemists and other medication providers still don't understand how crucial it is to tell patients to utilise artemether-lumefantrine with a high-fat meal. Lumefantrine's bioavailability is increased when consumed with food, particularly dietary fat (Ezzet et al., 2000). This is especially important since many people with malaria don't eat much when they're sick. Lumefantrine absorption improves in both magnitude and variability as clinical recovery occurs and regular food intake is resumed in individuals with uncomplicated malaria. Most druggists surveyed in this research did not tell patients using artemether-lumefantrine that they should eat regularly and avoid skipping meals.

Public health institutions in Tanzania often run out of antimalarial and other medications, so private community pharmacies fill the need. The vast majority of the population has easy access to these locations. Most individuals get their drugs, information about medicines, and advice on medical care from these establishments. High traffic counts at these establishments have been linked to subpar drug care . As a result, it is crucial that the chemists working at these facilities have the knowledge and training to properly advise their patients on all things pertaining to the medications they are taking. Good dispensing practise and the appropriate use of medications are two areas in

which these workers must demonstrate expertise and competence.

**Balance of Knowledge, Skills and Availability :** Most retail pharmacy dispensers' levels of expertise are determined by the kind of oversight and training they get. Dispensers are allowed to teach themselves, and most of what they gain relies on personal efforts, since pharmaceutical staff, in particular chemists, are rare and have no time to conduct supervised trainings. This supports the need that training be made available to these distributors. Furthermore, most pharmacy owners do not provide resources for their druggists to further their careers. As a result, they are not current on matters such as the latest medicines, medical advances, or newly recognised illnesses. Since advances in both science and technology are always being made, it is crucial that chemists have access to current scientific literature and internet-connected computers in order to provide their customers with accurate and up-to-date medication and illness information.

### Conclusions

This research demonstrates that drug distributors' knowledge and abilities are inadequate when it comes to delivering drugs that need a prescription, particularly among the non-pharmaceutical employees that make up the bulk of drug dispensers. Strategies to regulate the illogical distribution and use of antimalarial medications are required as the number of people being treated for malaria away from official institutions grows. Since most of the staff were qualified pharmacists, the Pharmaceutical Council of Tanzania should make sure that only pharmacists with further training are permitted to administer medications. Because of the rapid pace of technological advancement, the emergence of new illnesses, and the release of new medication information and treatment

recommendations, the Pharmacy Council should also establish mechanisms to ensure on-the-job education and professional growth for drug dispensing professionals.

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