

EVALUATION OF DISTRIBUTION AND STORAGE CONDITIONS OF MEDICINE IN PAKISTAN

Muhammad Imran Qadir*¹, Faraza Javed², Sana Ghafoor², Sadaf Naz², Ambreen Mehmood²

¹Institute of Molecular Biology & Biotechnology, Bahauddin Zakariya University, Multan, Pakistan

²College of Pharmacy, GC University, Faisalabad, Pakistan

mrimranqadir@hotmail.com

Abstract

The Quality System (QS) regulation covers the manufacture, storage, distribution and storage of finished products. After manufacturing of drugs or medicines, distribution and storage in pharmacies, is of prime importance especially in tropical areas like Pakistan, to maintain the therapeutics and efficacy of medicines. In the present study, we have compared some parameters regarding storage and distribution of medicines in Medical Stores and Pharmacies in 3 different cities of Punjab, Pakistan. On the basis of this study, we have concluded that Retail Pharmacy setup is gradually developing but flaws are also in the lane due to strong medical store chains in Pakistan. But now Pharmacy profession is making contribution in medical setup and pharmacy practice can be best done in every aspect in near future.

Keywords: *Pharmacy, Storage Condition, Pharmacist*

Introduction

Pharmacy services in Pakistan have experienced both evolutionary and revolutionary changes since 1947. The pharmaceutical sector always remained regulated at different levels. The changes in legislation are also the contributing factor to uplifting of the pharmacy profession^[1]. pharmacist and educational system for pharmacists has to be adapted as per rules^[2-4].

In the present study, we have compared some parameters regarding storage and distribution of medicines in Medical Stores and Pharmacies in 3 different cities of Punjab, Pakistan.

Methods

The drug storage survey was conducted at national level in three cities of Punjab. These cities were chosen randomly that can easily be surveyed by the members. The cities included were Faisalabad, Okara and Bahawalnagar. Faisalabad is well developed industrial city while Okara and Bahawalnagar are small Districts. We made a Performa regarding different parameters and visited different medical stores and pharmacies.

Data Collection

We visit different pharmacies and medical stores and collect data about following parameters:

- Pharmacy is either chain or independent
- Either any qualified person is present in pharmacy or medical store
- License of pharmacy and medical store
- Protection of drug from sunlight or dust
- Availability of ice bags, refrigerator or thermostat
- Storage condition of go down if present
- Method of handling of expiry drugs
- Pharmacies providing extemporaneous facility or not
- Average sale of OTC and prescribed medicine

These are some major parameters which we analyzed. We collect the data and calculate the average.

Results

Considering the 1st parameter, Pharmacies we visited were chain pharmacies. In pharmacy set up,

pharmacist was present for supervision. But in medical stores, technicians were there to serve people.

In pharmacy, qualified pharmacist is present at every outlet but in some medical store pharmacy technician run the whole setup. But mostly dispenser or layman hold the medical store setup.

License of all Pharmacies was of Category A. medical stores license was either category B or C.

Pharmacies have proper glass protection to protect drugs from dust and light. Certain medical stores had open space without any glass protection. Small medical stores often had this latter setup.

Storage of medicine is important as special care is required for vaccines, certain injectables and medicine kept at low temperature. Such medicine must be stored in refrigerator or must have ice bag facility at the time of delivery to the patients or customers.

100% Pharmacies and 76% of Medical stores fulfill the glass protection and temperature maintenance requirements.

The question was what is the storage condition of injectables?

- Open
- Refrigerator
- Dark place
- Specific for injection

Almost all pharmacies have refrigeration facility for injectables but this storage is specific for injectables some injection don't require refrigeration.

Most of medical stores have storage facility for injectables but some small medical stores don't have refrigeration but these are very small in number.

Pharmacies as well as medical stores both have proper procedure of handling of expiry. 6 months before expiry, those medicines separated and then send back to vendor or whole sale dealer or companies.

As far as sale of OTC and Prescribed medicine is concerned, there are more sales of prescribed drug then OTC but %age varies of both pharmacy and of medical store.

The graph showed that sale of OTC is 23.46% in different pharmacies and 33.46% in different medical stores and sale of prescription drugs is 76.54% in

different pharmacies and 64.23% in different medical stores. The data is calculated on average bases.

Then next the question was that vaccines are kept at

1. Ice box
2. Refrigerator
3. Open

In majority of the pharmacies both ice box and refrigerator were present. But this facility was not present in all medical stores. As shown in graph the percentage for storage facility of vaccines is more in pharmacies than in medical stores.

Next question was that what is the room temperature of pharmacy / medical store is?

1. 25-30 oC
2. 30-35 oC
3. Above 40 oC

In pharmacies well controlled temperature was observed in a range of 25-30 oC but this was observed in large pharmacies. There are some pharmacies which are just like medical store but named as pharmacy here room temperature was observed to be greater than 30 oC. While in most of medical stores room temperature was observed to be greater than 30 oC. Graph showing the results as: However drug storage requirements are any one of the following:

Refrigerator

A refrigerator is a cold place providing a temperature of between 2oC – 8oC.

Cold place

A storage condition has a temperature not exceeding 8oC.

Cool place

A cool place specifies a temperature of 8oC - 15oC.

Room temperature

Room temperature is between 15oC to 30oC.

Drug storage and safety is the responsibility of a pharmacist he must ensure the availability of appropriate storage facilities respective to each drug. As medical stores don't have qualified pharmacist so such facilities was observed to be less in percentage.

Discussion

Pakistan is a developing country and now a day's facing lots of problem. One major problem is the shortage of power. Electricity failure is the major problem in the whole country especially in the area of Punjab. Our survey is related to the storage of medication in pharmacies and medical store in community setup. Medicines should be handled very carefully. Their storage condition varies according to their formulation and dosage form. Some medicines should be protected from sunlight and some should be stored at low temperature e.g. vaccines. So we consider some basic parameters and visit different outlets and collected some data.

In Pakistan, storage conditions of medications are best fulfilled by pharmacies especially chain pharmacies as compared to medical stores. But in Pakistan, most of the population is illiterate and these people prefer medical store for the purchase of drugs as they people thought that pharmacy setup is costly. This is due to the lack of awareness of pharmacy profession and role of pharmacist in the health care system.

Although the pharmacists contributions are not yet recognized in Pakistan but there is every reason to be optimistic towards making patient care in community pharmacy a success.

References

1. Anderson S. The state of the World's pharmacy: a portrait of the pharmacy profession. *Journal of Inter professional Care*. 2002; 16: 391-404.
2. Karin W, Rob SS, Clare AM, Andries GS, and Marthe EWHOaIPF. Developing pharmacy practice - A focus on patient care. World Health Organization and International Pharmaceutical Federation 2006. 2006.
3. Glen JP. Evolution in the practice of pharmacy-not a revolution. *CMAJ*. 2007; 176: 1261-1262.
4. Hadzoviae S. Pharmacy and the great contribution of Arab- Islamic science to its development. *Med Arh*. 1997; 51: 47-50.

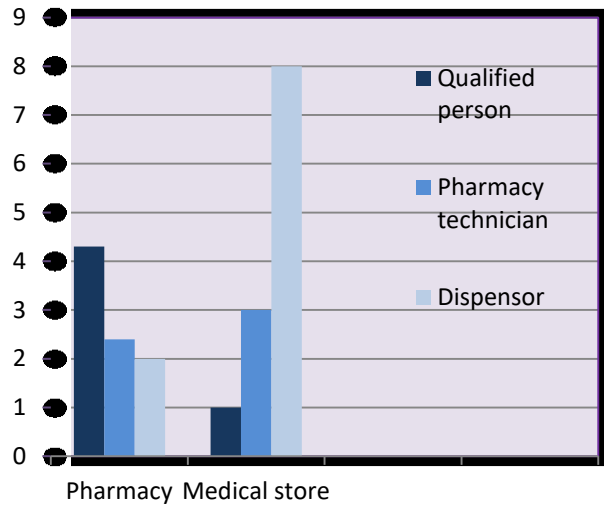


Figure 1: Expert Personels available

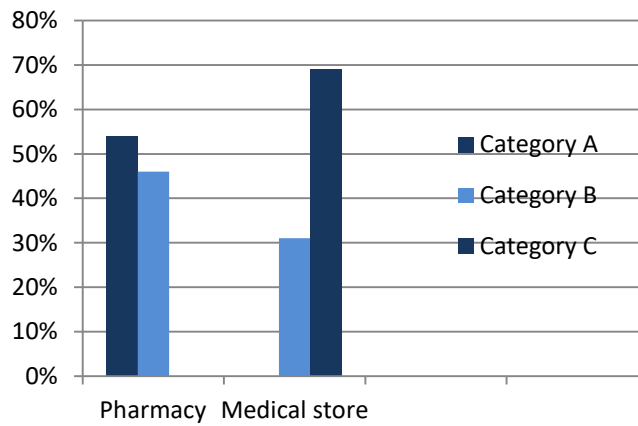


Figure 2: Licence available



Figure 3: Glass protection and temperature maintenance requirements

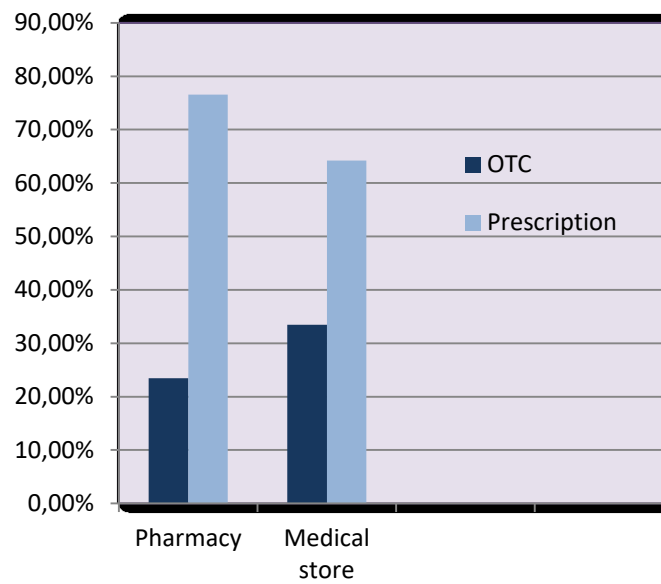


Figure 4: Sale of OTC and prescription medicines

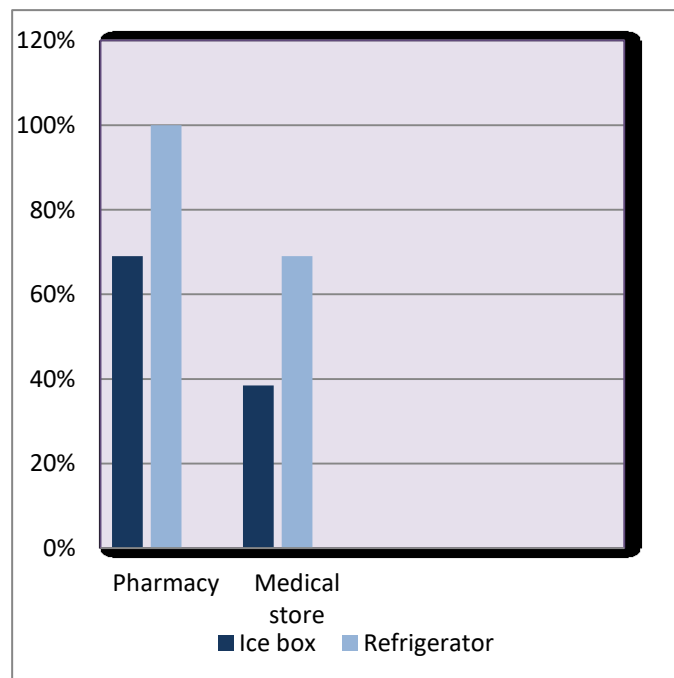


Figure 5: Conditons for injectables

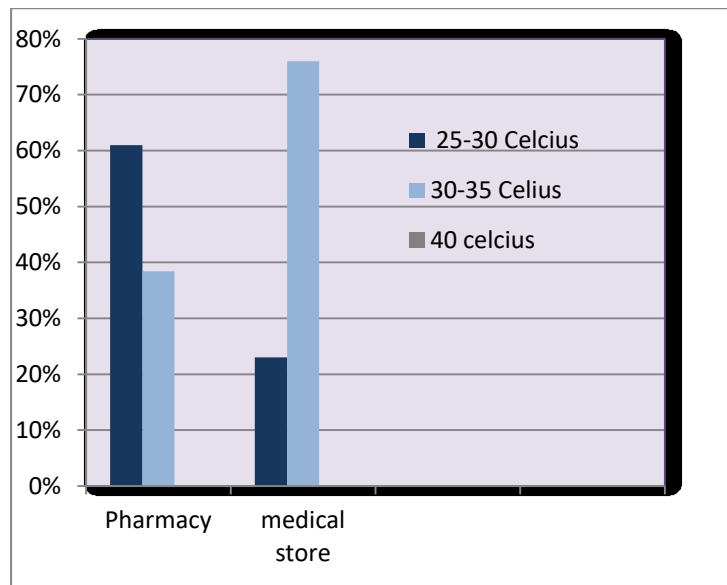


Figure 6: Temperature for storage