

Original article:

Facilities available in the medicine shops in Chittagong city corporation area: A cross-sectional study conducted in Bangladesh

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Abstract:

Background: The aim of this was to inspect the facilities available in the medicine shops and their impacts on quality medicines and health services to be found in the Chittagong City Corporation of Bangladesh. **Method:** This cross-sectional study was conducted from December 2015 to February 2016. A well-designed standard protocol developed by the project supervisor. Different information was collected from the medicine shops. **Results:** Among the total 190 studied medicine shops, pharmacist and physician were available in 99 (52%) and 51 (27%) shops, respectively. A-grade pharmacist was available in four(04) shops. However, no air conditioner was found in 14 shops, while a refrigerator was not found in 15 shops but these shops were facing sun rays from the east side. In addition, four (04) and five (05) shops were not used the air conditioner and refrigerator, respectively but they were facing sun rays from the west side. **Conclusion:** Facilities in the medicine shops in this city were good, however, we think the responsible person should be more aware to ensure proper retail pharmacy practices.

Keywords: Retail pharmacy; Health care; Facilities; Medicine shops; Chittagong City

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Introduction

Bangladesh is a poor and densely populated country in South Asia^{1,2}. It has made significant upgrading in the health sector, which makes it a model for other developing countries, and obviously, there is propagation in health infrastructures. There is also improved awareness of the general public health-related issues^{3,4}. Pharmacy is a health profession that correlates the health sciences with the basic sciences and it is dedicated to ensuring the safe and effective utilization of medication⁵. From the historical perspective, professionally the roles and responsibilities focused on medication compounding and dispensing to extended pharmaceutical care services⁶. The role of pharmacist varies in different parts of the world⁷. In numerous parts of the world, pharmacists have played a major role in pharmaceutical care services. In developing

countries, it is usually trusted that pharmacists can make a great involvement in the provision of the primary health care^{8,9,10}.

Pharmaceutical sector in Bangladesh has been upward at a remarkable speed from the time when 1982¹¹. As a part of health care system, the pharmacy has a vast practicing area such as hospital pharmacy, clinical pharmacy, community pharmacy, retail pharmacy and industrial pharmacy. Due to some limitations, mainly pharmacy practices emphasized on industrial practices rather than other divisions¹². So, much progress has been made in the pharmaceutical sector in the production of quality drugs and medicines. Nowadays, drug products manufactured by Bangladesh are exported to different countries of Asia, Africa, Latin America and Europe¹¹.

Till now, the practicing of hospital pharmacy, clinical pharmacy, community pharmacy and retail pharmacy

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not established in Bangladesh. In recent year, some private hospitals had tried to establish the hospital pharmacy department but it has not seen at public level¹². Retail pharmacy practicing is a major area for the pharmacist, as well as a healthcare system for a country. Because of the lack of retail pharmacy practices medication-related error had been occurred in everywhere. This current study was designed to investigate facilities available in the medicine shops and its impacts on quality medicines as well as health services to be found in the Chittagong city corporation of Bangladesh.

Study Methods

The survey study location was in the Chittagong district. Chittagong is the second largest city in Bangladesh. The population density was 1,400per Sq. Km^{1,13}. This cross-sectional study was conducted in the Chittagong district between December2015 and February 2016. For this purpose, a well-designed protocol developed by the project supervisor, Prof. Dr. Mohammed Aktar Sayeed, Department of Pharmacy, International Islamic University Chittagong (IIUC). Different information was taken and studied in the medicine shops these are given below:

- The availability of pharmacist and physician in the shops
- Category of the available pharmacist
- Number of available workers
- The facilities of the refrigerator, air conditioner and facing of sun rays and these correlations with medicine quality

Undergraduate students (14th Batch) of the Department of Pharmacy, International Islamic University Chittagong (IIUC) were assigned for data collection to conducting this survey. Each student submitted the filled data to the data collector. The principal investigator then accumulated all the data from the data collector. In this regard, simple statistics were applied. Results were finally expressed graphically in percentages.

Ethical clearance: The study was approved by the ethics committee of International Islamic University Chittagong, Bangladesh

Results and Discussion

Total 190 medicine shops studied therefore, the number of samples is 190 and no samples were under the exclusion criteria. In the case of pharmacist and physician availability, pharmacist and physician were available in 99 (52%) and 51 (27%) medicine shops, respectively (Fig.1).

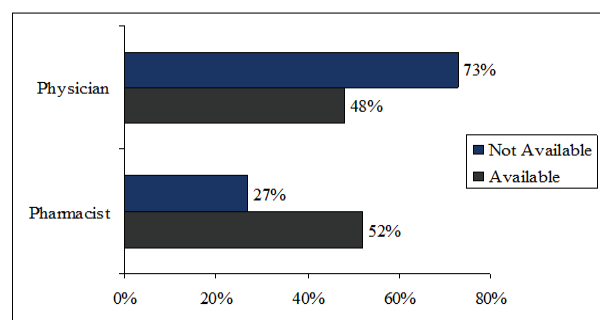


Fig. 1. The availability of pharmacist and physician

Considering the pharmacist availability, only A-grade pharmacist available in four (04) shops while B and C-grade pharmacists were available in the rest of shops(- Fig. 2).

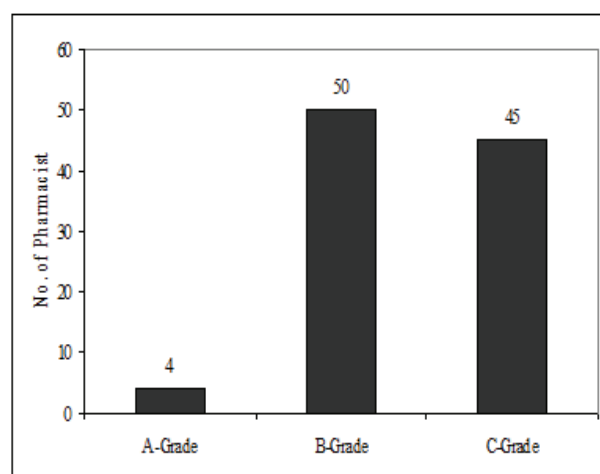


Fig. 2. Category of the available pharmacist

Minimum a worker was working in 59 shops, while two workers were available in 54 shops. Interestingly, a shop was found where fifteen (15) workers were available (Table 1).

Table. 1: The availability of workers

No. of Workers	Available in Shop
One	59
Two	54
Three	31
Four	17
Five	17
Six	7
Seven	2
Eight	1
Nine	1
Fifteen	1

Regarding the air conditioner, refrigerator and sun rays facing, an air conditioner was available in 21 shops but 122 medicine shops had used the refrigerator to store drugs (Fig. 3).

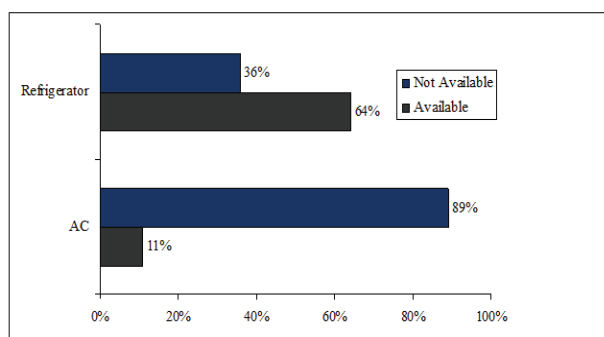


Fig. 3. The availability of air conditioner and refrigerator

Among the invigilated shops, 49 and 44 shops were facing sun rays from the west side and east side, respectively. Moreover, the air conditioner was not found in 14 shops and refrigerator was not available 15 shops, however, these shops were facing sun rays from the east side. On the other hand, only four (04) and five (05) shops were not ensured air conditioner and refrigerator, respectively but these shops were faced sun rays from the west side (Fig. 4.)

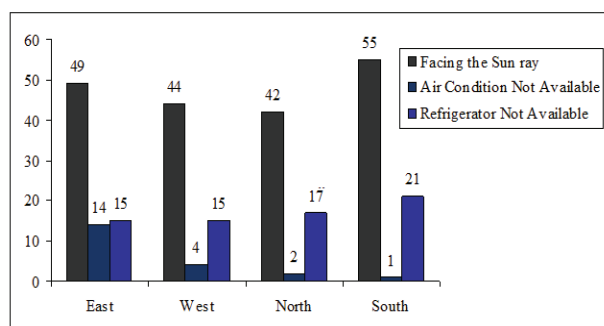


Fig. 4. Correlation of sun rays with air conditioner and refrigerator

The demand for pharmacist is increasing in public health. Moreover, the WHO recommends a ratio of one pharmacist per 2000 population in order for optimal health care to be delivered¹⁴⁻¹⁶. Besides the fundamental role in public health, pharmacists can also perform as advisors to physicians and nurses and contribute to policy decisions, on the other hand their irrational practice may lead to many problems¹⁴⁻¹⁶. The main task of a retail pharmacist is to ensure the proper storage condition for medication and dispense the right medication to the right kind of patient. The theoretical along with practical knowledge of community pharmacy, clinical pharmacy, along with hospital pharmacy is important to ensure proper services of retail pharmacy. A pharmacist is a right person who gained such kinds of knowledge.

According to the result, pharmacists were not

available in 89 shops. That was sign malpractice of medicine shops. Conversely, the availability of physician in 51 shops was a good sign of medicine shops practice. Workers are also a significant person in medicine shops. The requirement of workers varies from shops to shops. Regarding the result, the availability of workers was sufficient for the medicine shops. Temperature control is the most significant fact for medicine shops because several pharmaceutical drug products, including steroid, hormone and blood products are heat sensitive. At high temperature, these drugs may be degraded. There are some other pharmaceutical dosage forms also susceptible to degradation. Therefore, air conditioner and refrigerator are essential to maintain room temperatures, as well as the temperature of drug products, respectively. According to the result, in the one-third of medicine shops where the refrigerator was available although in the two third medicine shops where the refrigerator was not available. Moreover, the facing of sun rays also important for shops because the direction of sun rays from the east and west side may be a reason for drug degradation. To prevent this degradation air conditioner and refrigerator are essential instruments. Regarding the study result, only a few shops had no air conditioner and refrigerator though they facing sun rays from the east or west side. In Bangladesh perspective, the number of retail pharmacies is very limited. As a result, people could not get proper health services and quality of drug products did not maintain properly. So, regulatory authorities and people should be aware of the necessities of retail pharmacies. In addition, regular monitoring of medicine shops is essential and active media awareness and seminars should be created to educate drug users on the drug-related issues. Additionally, workers should be well trained in drug storages. Every medicine shop should be run by the graduate pharmacist.

Conclusion: our study found that the facilities in the medicine shops in this city were good. As pharmacy services are connected to our health, therefore, such kind of services should be excellent. To ensure proper

health care, it is essential to ensure proper retail pharmacy services. So, we think every responsible person should be more aware and do work together to ensure proper pharmacy services in an efficient way.

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project work.

Conflict of interests

The authors have no competing interests to declare.

Author's contribution:

Study design and Data gathering: Md. Jakaria and Mohammed Aktar Sayeed

Writing and submitting manuscript: Md. Jakaria

Editing and approval of final draft: Md. Jakaria and Mohammed Aktar Sayeed

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