Assessment of Practice Details and Resource Availability of Community and Hospital Pharmacies in Mogadishu, Somalia

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Abstract: Introduction: Pharmacy has moved from dispensing to pharmaceutical care; pharmacists have a role in improving patient safety. Community and hospital pharmacy practice has a major impact on the health of the public. Standards of practice are not well defined and details of community pharmacy practice are unpredictable in Somalia and it is doubtful whether the practice is structured and follows prescribed standards. The resource availability profile has serious implications on the pattern of practice. The objectives of the present study were to identify routines activities performed in community and hospital pharmacies in Somalia and to determine the extent to which resource limitations affect the pattern of pharmacy practice. Methods: This study was a cross-sectional study conducted between October and December, 2019. It involved randomly selected 25 community pharmacies and 25 hospital pharmacies including the only 3 available public pharmacies in Mogadishu, Somalia. This study used a modified questionnaire based on current literature and it was designed to assess the respondents’ demographics, resource availability of pharmacies surveyed and practice details of pharmacists. Pretesting of the questionnaire was done on 5 randomly selected pharmacies. Data were analyzed using SPSS (Statistical Package for Social Sciences) version 20.0 software. Descriptive statistics were used to report pharmacy employees’ demographics [frequency and percentages; mean ± standard deviation (SD)]. Results: 50 distributed survey instruments were filled. Data analysis showed that only 12% of the pharmacy employees were pharmacists and that 86% of pharmacy employees give prescription drugs to patients without a prescription. Fifty percent (50%) of pharmacy employees admitted they administer an injection to patients. The rate of incoming prescriptions to pharmacies was generally low with 44% of pharmacy premises claiming that they had never received any prescriptions from private hospitals. Sixty percent (60%) of pharmacists surveyed admitted making drug recommendations to patients irrespective of the nature of the drug. Most pharmacies in the study had equipment to measure blood pressure, check body temperature, screen for diabetes and malaria. However many of them lacked necessary types of equipment required to measure body mass index, weigh patients, screen for high cholesterol levels; also tools that could facilitate more accurate dosing e.g., tablet cutter and tablet crusher were absent in most pharmacies. Conclusion: This study showed that resource availability of surveyed community and hospital pharmacies was average but the pharmacy practice standards were poor. No statistical difference was observed between both facilities. Prescribing and recommending drugs to patients; giving prescription drugs without prescription; not counseling the patients about their medications; practicing pharmacy by non-pharmacists are all activities that could have a negative impact on public health. Continuing education would be essential for pharmacists and pharmacy employees in promoting good pharmacy practice; practicing pharmacy by only pharmacists is recommended to avoid improper pharmacy practice.

Key words: Community pharmacy, hospital pharmacy, pharmacy practice, Mogadishu.

1. Introduction

Pharmacy has moved from dispensing to pharmaceutical care; pharmacists have a role in improving patient safety. Pharmacists have also an important role in observing and preventing drug-related problems [1], they also have a role in improving patient’s medication adherence [2]. Pharmacists can optimize pharmacotherapy in geriatric patients [3]. Pharmacist counseling can play a pivotal role in reducing the implications of improper inhaler use [4]. Community and hospital pharmacy practice has a major impact on the health of the public. Pharmacists are scarce in Somalia compared to other countries due
to the unavailability of pharmacy education in Somalia. Pharmacists in Somalia are approximately 40, they obtained their degree abroad mainly from Sudan, Yemen, Pakistan, India, Jordan. Yet, none of the available universities (around 70) offers proper pharmacy education in Somalia. Some universities in Somalia offer a one-year diploma in pharmacology. There are no mandatory requisites to open a pharmacy in Somalia also there is not any basic qualification needed to run a pharmacy. Due to the severe lack of experts/academicians in the field of pharmacy in Somalia, most of the healthcare professionals are ignorant about the field of pharmacy. Hospitals and pharmacies in Somalia operate as drug stores owned by non-pharmacists where it is very common to dispense even a prescription drug without a prescription and performing the diagnosis of the patients. Most of the personnel in these pharmacies have minimum pharmacy training or any related training. The reason for this problem is the shortage of qualified individuals and the lack of pharmacy-related education. Pharmacies have proliferated since the outbreak of the civil war. Most of those pharmacies in Mogadishu are run by people with little or no training and they dispense all kinds of drugs on request, without doctors’ prescriptions. Before the civil war, the Ministry of Health controlled the flow of drugs into the country, but today, no such controls are in place [5]. As mentioned above, the standards of practice are not well defined and details of community pharmacy practice are unpredictable in Somalia and it is doubtful whether the practice is structured and follows prescribed standards. The resource availability profile has serious implications on the pattern of practice. Therefore, we carried out this study to illustrate the practice of pharmacy in Somalia and the resources that are available to them.

2. Materials & Methods

2.1 Study Design

This study was a cross-sectional study conducted between October and December, 2019. It involved randomly selected 25 community pharmacies and 25 hospital pharmacies including the only 3 available public pharmacies in Mogadishu, Somalia. Somalia is a Sub-Saharan country in the East African region with a landmass of 637,657 km² and a total population of 14,318,000 [6]. This study used a modified questionnaire based on current literature [7] and it was designed to assess the respondents’ demographics, resource availability of pharmacies surveyed and practice details of pharmacy employees. Pretesting of the questionnaire was done on 5 randomly selected pharmacies.

2.2 Data Collection

Data were collected using a modified questionnaire based on current literature [7]. The self-administered, pretested and structured questionnaire was designed to consist of three sections, as follows:

- **Section One: Demographics**

  It included 4 items that covered participants’ gender, age, marital status and professional status.

- **Section Two: Resource Availability**

  This section included 16 items to test the resource availability of community and hospital pharmacies surveyed.

- **Section Three: Practice**

  The practice section included five items which examined pharmacy employee’s practice status.

2.3 Data Analysis

Data were analyzed using SPSS (Statistical Package for Social Sciences) version 20.0 software. Descriptive statistics were used to report pharmacy employee’s demographics [frequency and percentages; mean ± standard deviation (SD)]. The variables for testing practice of the healthcare professionals were graded on a two-point scale (agree/disagree) where 1 was for agree and 0 for disagree. Statistical significance was considered at p ≤ 0.05.

3. Results

A total of 50 pharmacy employees in the central
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and southern regions of Somalia filled the survey instruments.

3.1 Demographics

Gender distribution showed that most of the participants were male (82%). The results showed that most of the healthcare professionals who participated in this study were between the ages of 24 and 30 years (60%) and only (6%) of the respondents were elder than 40 years. The results showed that only six participants were pharmacists while 34% of the participants do not have any profession (Table 1).

3.2 Resource Availability Items

This section examined the resource availability of the surveyed community and hospital pharmacies and results showed that only 4% of the pharmacies had tablet splitter and 2% had tablet crusher 4% had weight/height chart. A similar answer profile was observed with a weight/height chart. However, the other items availability was average as shown in Table 2.

3.3 Practice

Most of the surveyed pharmacies admitted that they give a drug without a prescription for prescription drugs (86%); participants agreed that they prescribe and recommend medications to patients (60%), surveyed pharmacy employees also admitted that they administer injections to patients (50%) (Fig. 1).

| Table 1 Demographic data of pharmacy employees. |
|-----------------------------------------------|
| Gender | Number of pharmacy employees | Percentage (%) |
| Female | 9 | 18% |
| Male | 41 | 82% |

| Age | Number of pharmacy employees | Percentage (%) |
| 19-24 | 8 | 16% |
| 24-30 | 30 | 60% |
| 30-40 | 9 | 18% |
| > 40 | 3 | 6% |

| Professional status | Number of pharmacy employees | Percentage (%) |
| Pharmacist | 6 | 12% |
| Nurse | 14 | 28% |
| Others | 17 | 34% |
| None | 13 | 26% |

| Marital status | Number of pharmacy employees | Percentage (%) |
| Single | 20 | 40% |
| Divorced | 0 | 0% |
| Widowed | 1 | 2% |
| Married | 29 | 58% |

| Table 2 Resource availability of pharmacies surveyed. |
|-----------------------------------------------|
| Item | Yes percentage (%) |
| Functioning air conditioner | 58% |
| Refrigerator | 86% |
| Computer | 74% |
| Weighing scale | 42% |
| Meter rule | 8% |
| Sphygmomanometer | 66% |
| Glucose meter | 64% |
| Cholesterol meter | 46% |
| Thermometer digital mercury | 68% |
| Tablet splitter | 4% |
| Tablet crusher | 2% |
| Pregnancy test strips | 70% |
| Weight/height chart | 4% |
| Malaria parasite test kits | 64% |

| Number of reference books | 0 book | 20% |
| 1-2 books | 60% |
| 3-4 books | 20% |

| Number of support staff | 0 | 10% |
| 1-2 | 60% |
| 3-4 | 30% |
Fig. 1 Practice details of pharmacy employees.

4. Discussion

The present study was undertaken to look for the practice details of pharmacy employees and resource availability of community and hospital pharmacies in Mogadishu, Somalia. Pharmacists are scarce in Somalia approximately compared to other countries. Due to that reason, only 6 (12%) of the surveyed pharmacy employees were pharmacists with most of the pharmacy employees having other professions like medical laboratory science. A bibliometric review conducted by Scahill et al. [8] demonstrated that there were few publications in the area of pharmacy education in low- and middle-income countries and that there was a need for a research agenda in order to address gaps in the research literature.

Practice details of the pharmacies surveyed were poor in this study. Considering that most of the pharmacy employees were not pharmacists, the patients could not take any counseling about their medications. A study in Qatar that evaluated the community pharmacy practice found that counseling practices were poor and 70% of the pharmacists did not counsel simulated patients about their dispensed medicines [9].

Most of the pharmacy employees admitted to give a drug without a prescription for prescription drugs (86%). A study in Jeddah-KSA found that most of the pharmacists hand out antibiotics, antihypertensive drugs, anti-psychiatric drugs without asking for a doctor’s prescription [10]. Another cross-sectional survey of community pharmacies in China found that antibiotics were easily obtained without a prescription in the surveyed community pharmacies [11]. Sixty percent (60%) of the pharmacy employees in this study admitted that they prescribe medications to patients. Prescribing and recommending drugs to patients by the pharmacy employees is not appropriate while most of the surveyed pharmacy employees in this study were not pharmacists.

A policy review conducted in Canadian provinces to compare pharmacist prescribing policies found that pharmacists were involved in continuing existing prescriptions, adapting existing prescriptions and initiating new prescriptions [12]. Fifty percent (50%) of the pharmacy employees admitted that they
administer injections to patients. A cross-sectional study conducted in Pokhara city showed that about a quarter of the pharmacies surveyed were providing services such as the administration of injections and medicine dispensing and counseling services despite the lack of qualified staff and adequate infrastructure [13].

Our results showed also that resource availability of community and hospital pharmacies was average except that most of the pharmacies did not have tablet splitter, crusher and weight/height chart which facilitate the correct dose on medications. Most of the pharmacies were equipped with a functioning air conditioner, refrigerator, computer, weighing scale, sphygmomanometer, glucose meter, cholesterol meter, thermometer digital mercury. There were no suitable waiting and counseling areas in most pharmacies. Some of the pharmacies were so small to be identified as health care facilities.

Urick and Meggs [14] published a research about evolution of pharmacy practice and education in America and demonstrated that the history of community pharmacy progressed towards greater professional standing through changes in pharmacy education and practice with the focus shifted from the products to patients. Increasing degree requirements and postgraduate training have enhanced pharmacists’ ability to provide patient care services not directly associated with medication dispensing [14].

FIP/WHO provided good pharmacy practice guidelines and recommended that national pharmacy professional associations consider to these main roles, functions and activities for pharmacists, where appropriate:

- Prepare, obtain, store, secure, distribute, administer, dispense and dispose medical products.
- Provide effective medication therapy management.
- Maintain and improve professional performance.
- Contribute to improving effectiveness of the health-care system and public health [15].

5. Conclusions and Recommendation

This study showed that resource availability of surveyed community and hospital pharmacies was average but the pharmacy practice standards were poor. No statistical difference was observed between both facilities. Prescribing and recommending drugs to patients; giving prescription drugs without prescription; not counseling the patients about their medications; practicing pharmacy by non-pharmacists are all activities that could have a negative impact on public health. This study recommends the need for a legal framework that defines who can practice pharmacy and the scope of pharmacy practice and ensures the integrity of the supply chain and the quality of medicines. Continuing education would be essential for pharmacists and pharmacy employees in promoting good pharmacy practice; practicing pharmacy by only pharmacists is recommended to avoid improper pharmacy practice. Further studies should be conducted also due to the small sample size of this study.

6. Declarations

Availability of data and materials: The datasets used during the current study are available from the corresponding author on a reasonable request.

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