

**PRESCRIPTION CHALLENGES FACING COMMUNITY MEDICINE
OUTLETS IN DELIVERY OF PHARMACEUTICAL SERVICES IN
DAR ES SALAAM REGION.**

Peter John Njalale

**MSc (Pharmaceutical Management) Dissertation
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**PRESCRIPTION CHALLENGES FACING COMMUNITY MEDICINE
OUTLETS IN DELIVERY OF PHARMACEUTICAL SERVICES IN
DAR ES SALAAM REGION.**

By

Peter John Njalale

**A dissertation Submitted in Partial Fulfillment of the Requirements for the Degree
of Master of Science in Pharmaceutical Management of
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October, 2013**

CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled “Prescription Challenges facing Community Medicine Outlets in Delivery of Pharmaceutical Services in Dar es Salaam Region- Tanzania”, in partial fulfillment of the requirements for the MSc Programme (Pharmaceutical Management) of Muhimbili University of Health and Allied Sciences.

Dr. R. S. Malele
Supervisor

Date

DECLARATION AND COPYRIGHT

I, **Peter John Njalale** declare that this **dissertation** is my original work and that it has not been presented and will not be presented to any other University for similar or any other degree award.

Signature

Date

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DEDICATION

I would kindly like to dedicate this work to my lovely wife, Maria P. Njalale for her support and serious encouragement she gave me all the time in order to conduct this study at the standard level.

ABSTRACT

Background: The city of Dar es Salaam is growing very rapidly in all sectors. The increase of the population in the city also reflects the need of pharmaceutical services. However, delivery of pharmaceuticals to the society should be in accordance to direction given in the prescription, except for over the counter drugs (OTC). But, there has been a tendency for prescription medicines being dispensed without prescription order.

Study Objective: To investigate prescription challenges facing community medicine outlets in delivery of pharmaceutical services in Dar es Salaam region.

Materials and methods: A descriptive cross-sectional study design was conducted from October 2012 to June 2013. A total of 228 participants were interviewed (where 140 pharmacies and 88 DLDM), obtained by calculating 30% of eligible participants within the strata population plus 10% for attrition rate. They were selected by simple random sampling technique using computer software package from a strata population list, to have equal representation from Pharmacy and DLDM. Questionnaires, simulated client who was appeared at medicines outlet to buy prescription medicines without a prescription and physical observation of prescription book and prescriptions retained for the whole year 2012, were used to interview medicines dispenser in the pharmacy and in the DLDM. The views of the stakeholders (i.e. MSH and PST) and specific organizations (i.e. MoHSW and Regulatory authorities) relevant to this study were sought.

Results: Among 228 respondents participated in the study, 61.4% (140) were from the pharmacies and 38.6% (88) from DLDM. The majority of them 82.9% (189) being female while male being only 17.1% (39). Professionally, 10.5% (24) of respondents were pharmacists, 9.7% (22) were pharmaceutical technicians, 4.4% (10) pharmaceutical assistants and the rest 75.4% (172) were none-pharmaceutical professions (i.e. medical doctor, clinical officers, nurse midwives and nurse assistants). Among the none-pharmaceutical personnel carders who are medicine dispensers 65.8% (150) were nurse assistants. However, 47.7% (82)

of all non pharmaceutical personnel participants received training on ADDO while the majority that is 52.3% (90) was not.

The majority of the medicine outlets i.e. 90% (126) of pharmacies and 97.7% (86) of DLDM sell prescription only medicines without a prescription. However, among 6 respondents who did an in-depth interview, they all agreed on having a prescription challenges in the health system.

Out of all medicine outlets 228 participated in the study, 38.2% (87) that prior have shown to have prescription book, only 25.9% (59) that kept record in their prescription book. However, 32% (73) of medicine outlets that retained prescription copies for the whole year 2012, only 22% (50) that had real stored prescription copies.

Conclusion: Despite the existing effort to alleviate the problem of selling prescription medicines without prescription at the level of medicine outlets, yet there is a significant problem of malpractice which has been continued within the health system, it has now developed into being a character within the entire health sector. This study has found to be like treating symptoms while the causative agent left untreated. Pharmacy Council should strengthen its inspection on the medicines delivery points in private health facilities both by type of medicines stored and by level of medicine dispensers, should enforce the existing laws in order to keep balance between enforcing regulation and performance of the dispensers. Yet, how profit aspirations and internet services contribute to self medication is still not known.

Recommendations:

The government in collaboration with other stakeholders should train more qualified medicine dispensers. To develop an agency that will be responsible for preparation, distribution and monitoring the use of prescription at all levels by using its number and also it will be overseeing the conduct of all professions as well as to use multi-sector approach within the health sector to sensitize use of prescription for prescription only medicines.

And to establish health guidelines that directing private hospitals and dispensaries to prepare and use duplicated prescription copies.

Key words: Prescription, Prescription Medicines, Community Medicine Outlets, and Medicine Dispensers.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADDOS	Accredited Drug Dispensing Outlets
ALU	Artemether Lumefantrine
DSM	Dar es Salaam
DLDM	Duka la Dawa Muhimu
DR	Drug Resistance
MAT	Medical Association of Tanzania
MOHSW	Ministry of Health and Social Welfare
MUHAS	Muhimbili University of Health and Allied Sciences
MSH	Management Science for Health
NRAs	National Regulatory Authorities
OTC	Over the Counter
PC	Pharmacy Council
PST	Pharmaceutical Society of Tanzania
TANA	Tanzania Nursing Association
TFDA	Tanzania Food and Drugs Authority
TRA	Tanzania Revenue Authority
WHO	World Health Organization

CHAPTER ONE

1.1. BACKGROUND

1.1.0 Introduction

Dar es Salaam is the largest city in Tanzania. It is also the country's richest city and a regionally important economic centre. Dar es Salaam is an administrative province within Tanzania, and consists of three local government areas or administrative districts: Kinondoni to the north, Ilala in the centre of the region, and Temeke to the south. The Dar es Salaam Region has a population of around 3 – 4 million people. With a population rate increase of 4.39% annually the city has become the third fastest growing in Africa [9th fastest in the world], after Bamako and Lagos, respectively. Though Dar es Salaam lost its official status as capital city to Dodoma in 1974 [a move which was not complete until 1996](1).

Dar es Salaam, located on the east coast of Tanzania, lies between latitude 6.45°S and 7.25°S, and longitude 39°E and 39.55°E. It borders the Indian Ocean to the east, and the Coast [Pwani] region on the north, west and south. It stretches about 100km between the Mpiji River to the north and beyond the Mzinga River in the south, comprising a total land area of 1,630.7 km² [about 0.2% of the entire Tanzania mainland's area](2).

1.1.1 Events on the History of Medicines

Medicines are perhaps as old as mankind and the concept how their quality has to be ensured has evolved gradually over the time. Unfortunate events have catalyzed the development of medicines regulation more than the evolution of a knowledge base (3).

In 1932, the Public Health Service, working with the Tuskegee Institute, began a study to record the natural history of syphilis in hopes of justifying treatment programs for blacks. It was called the "Tuskegee Study of Untreated Syphilis in the Negro Male" (4,5).

In 1937 over 100 people in the United States died of diethylene glycol poisoning following the use of a Sulfanilamide elixir, which used the chemical as a solvent without any safety testing (3,6,7,8).

Another catastrophe that influenced the development of medicines regulation far more than any event in history was the thalidomide disaster. Thalidomide was a sedative and hypnotic that first went on sale in Western Germany in 1956. Between 1958 and 1960 it was introduced in 46 different countries worldwide resulting in an estimated 10,000 babies being born with phocomelia and other deformities (9).

The increase of the population in Tanzania also reflects the need of pharmaceutical services. However, delivery of pharmaceuticals to the community should be in accordance to direction given in the prescription by the authorized practitioner, except for over-the-counter [OTC] medicines. But, there has been a tendency for prescription medicines being dispensed without prescription order (10,11,12,13,14,15,16).

A prescription is a health-care programme that governs the plan of care for an individual patient and is implemented by a qualified practitioner. A qualified practitioner might be a physician, dentist, nurse practitioner, pharmacist, psychologist, or other health care provider. Prescriptions may include orders to be performed by a patient, caretaker, nurse, pharmacist, physician, other therapist, or by automated equipment, such as an intravenous infusion pump. Formerly, prescriptions often included detailed instructions regarding compounding of medications but as medications have increasingly become pre-packaged manufactured products, the term "prescription" now usually refers to an order that a pharmacist dispense and that a patient take certain medications. Prescriptions have legal implications, as they may indicate that the prescriber takes responsibility for the clinical care of the patient and in particular for monitoring efficacy and safety (17).

Prescription medicine is a licensed medicine that is regulated by legislation to require a medical prescription before it can be obtained. The term is used to distinguish it from over-the-counter medicines which can be obtained without a prescription.

1.1.2 Prescription Requirements

A prescription is an order for medication which is dispensed to or for an ultimate user. A prescription is not an order for medication which is dispensed for immediate administration to the ultimate user [for example, an order to dispense medicines to an inpatient for immediate administration in a hospital is not a prescription].

A prescription for a prescription medicine must be dated and signed on the date when issued. The prescription must include the patient's full name and address, and the practitioner's full name, address, and his/ her registration number. The prescription must also include:

- i. drug name
- ii. strength
- iii. dosage form
- iv. quantity prescribed
- v. directions for use
- vi. number of refills [if any] authorized

A prescription for a prescription medicines must be written in ink or indelible pencil or typewritten and must be manually signed by the practitioner on the date when issued. An individual [secretary or nurse] may be designated by the practitioner to prepare prescriptions for the practitioner's signature.

The practitioner is responsible for ensuring that the prescription conforms to all requirements of the law and regulations (18). Community pharmacists are often the last point of contact in the healthcare chain for patients collecting their prescription[s]. They are, therefore, well placed to screen for motivational problems, to assess any obstacles or lack of understanding and knowledge and to provide technical and motivational support tailored to the patients' needs. Dispensing medicines must be accompanied by exhaustive instructions regarding medication use in order to detect any restricted ability (dexterity, vision, cognition) and to offer specific support (19).

In the resource limited countries, many patients obtain medicines from untrained vendors without prescription, in inadequate courses, and without/with inadequate information (20,21,22,23).

1.2 STATEMENT OF THE PROBLEM

The increase of the population in Tanzania also reflects the need of pharmaceutical services. However, delivery of pharmaceuticals to the community should be in accordance with direction given in the prescription by the authorized practitioner, except for Over the Counter [OTC] medicines. The purpose of this study was to investigate prescription challenges facing community medicine outlets in delivery of pharmaceutical services.

Prescriptions are prepared with inadequate carbonated copies, therefore, results into no prescription copy retained at the medicines outlet for reference when prescription medicine is dispensed. And insufficiency of prescriptions cause practitioners to prescribe medicines on a simple paper, and when the medicines seller dispenses the available medicines to a client, while some of medicines are out of stock, hence the client has to go to the next medicines outlet to find the missed medicines with the same prescription without leaving a copy behind.

Lack of effective and efficient guideline which directs private hospitals to prepare duplicated copies of prescriptions, or they should obtain prescriptions from a single source of prescriptions for both government and private hospitals.

Inefficient adherence to Good Dispensing Practices where by medicines dispenser in medicine outlets do dispense prescription medicines without prescription as requested by a client or as recommended by drug dispensers in the drug outlets (24).

However, inadequate number of qualified personnel in medicine outlets impairs delivery of pharmaceutical services in the community (25).

In Dar es Salaam region, the magnitude of proportion of medicine outlets which sell prescription medicines without prescription is not well known. It is also not well documented about the current situation of the qualified personnel available in the medicine outlets. Other prescription challenges facing community medicine outlets in delivery of pharmaceutical services in Dar es Salaam region need also to be assessed.

1.3 RATIONALE

This study was designed to investigate prescription challenges facing community medicine outlets in delivery of the pharmaceutical services in Dar es Salaam region. Therefore there was a need to conduct this research in order to determine the proportion of medicine outlets that sell prescription medicines without prescription, percentage of qualified personnel available and to determine other factors contributing to prescription challenges facing community medicine outlets in delivery of pharmaceutical services. The finding of this study will be used by relevant organizations and regulatory authorities to formulate strategic plans that will improve delivery of pharmaceutical services.

1.4 RESEARCH QUESTIONS

- a) What proportions of pharmacies sell prescription medicines without prescriptions?
- b) What proportions of DLDM sell prescription medicines without prescriptions?
- c) What is the number of qualified personnel encountered in the medicine outlets?
- d) What are the other factors contributing to prescription challenges facing community medicine outlets in delivery of pharmaceutical services?
- e) What are the opinions of stakeholders that intended to improve delivery of pharmaceutical service in Dar es Salaam?

1.5 NULL HYPOTHESES

Prescription medicines are dispensed without prescription.

1.6. OBJECTIVES

1.6.1 Broad Objective

To investigate prescription challenges facing community medicine outlets in delivery of pharmaceutical services in Dar es Salaam region.

1.6.2 Specific Objectives

- a) To determine proportions of Pharmacies that sell prescription medicines without prescriptions.
- b) To determine proportions of DLDM that sell prescription medicines without prescriptions.
- c) To determine number of qualified personnel available in the community medicine outlets in Dar es Salaam.
- d) To determine factors contributing to prescription challenges facing community medicine outlets in delivery of pharmaceutical services in Dar es Salaam.
- e) To assemble opinions of the stakeholders intended to improve delivery of pharmaceutical services in Dar es Salaam.

CHAPTER TWO

2.0 LITERATURE REVIEW

The WHO estimates that up to 50% of medicines sourced from websites [unregulated supply chain] that conceal their physical address are counterfeit. Many of these websites are advertising and supplying the medicines illegally, with inadequate consultation, no prescriptions and often no involvement of qualified healthcare professionals (22,26,27,28).

In a study conducted in Kathmandu, Nepal aimed at assessing antibiotic dispensing by drug retailers found that, although legislation in Nepal mandates a medical prescription for purchase of antibiotics, unauthorized dispensing is clearly problematic. Drug retailers in our study did not demonstrate adequate understanding of the disease processes in question to justify their use of these drugs. Risks of such indiscretion include harm to individual patients as well as spread of antimicrobial resistance (24).

In post-conflict countries like Liberia, for example, the profession is barely visible, yet it is in these countries where medicines regulatory systems are weak and practice is substandard. For example, prescription medicines are freely sold on the streets of Monrovia (29).

A study that was done in Ghana aimed at assessing drug outlets and their staff in both public and private sector facilities, and how their activities conformed to global and national initiatives for malaria control. The author reported that, majority of the staff assessed were inadequately skilled to appropriately manage malaria cases (30).

A paper report on Dispensing Drugs without Prescription and Treating Patients by Pharmacy Attendants in Shiraz, Iran reported that drug use is practiced widely all over the world and is increasing. Official regulations for controlling the dispensing of drugs are often ineffectual as has been demonstrated in this study. In a country where drug dispensing is legally restricted, it is obvious that even potentially fatal drugs are sold upon a customer's request without prescription (31).

In a cross-sectional survey and observational study of dispensing practices conducted in Dar es Salaam, Tanzania, the author reported that; in Tanzania, an overwhelming proportion of medicines sold in pharmacies are dispensed without a prescription. The majority of medicines dispensed without a prescription are either requested by the client or recommended by the dispenser. When dispensing medicines, dispensers seldom give dosage instructions; when they do, the instructions are often not consistent with guidelines (37)

Another study also conducted in Dar es Salaam that was assessed dispensing practices in private pharmacies in Dar-es-Salaam, Tanzania, reported that, out of medicines dispensed; 45% of the dispensed medicines were requested by the client, 32% were recommended by the dispenser and only 23% were on prescriptions (10)

A study done in Dar es Salaam to assess knowledge of mothers of children under tens years of age on management of fever, found that fever is a public health concern among under tens, which contributed to high rate of self-medication and irrational use of medicines (32).

An article Journal titled creating a New Class of Pharmaceutical Services Provider for Underserved Areas: The Tanzania Accredited Drug Dispensing Outlet Experience. The author showed the problem to as, in developing countries, the most accessible source of treatment for common conditions is often an informal medicines shop, where medicine sellers are untrained and operations are unmonitored (33).

Pharmacists in resource limited countries tend to confine themselves in dispensing role mainly in community pharmacies. We challenge these pharmacists to move away from the dispensing window and to demonstrate the value of the years invested in pharmacy schools to improve the well-being of communities (29,34).

CHAPTER THREE

3.0 METHOD AND MATERIALS

3.1 Study area

The study was conducted in Dar es Salaam Region, the administrative and commercial capital of Tanzania. Dar es Salaam is divided into 3 municipalities namely Ilala, Kinondoni, and Temeke. Dar es Salaam region was conveniently selected because it is the only region where majority of retail medicine outlets [364 retail pharmacies and 234 DLDM] are located and therefore appropriate for the intended sample size.

3.2 Study population

The study populations were medicine dispensers in retail medicine outlets who were available in each of the selected facility during the time of the study. The stakeholders [i.e. MSH and PST] and specific organization [i.e. MoHSW and Regulatory authorities i.e. PC and TFDA] were consulted in order to get some information required to archive the objectives.

3.3 Study design

The design was descriptive cross-sectional study.

Descriptive studies describe pattern of disease (problem) occurrence in relation to, place, time and person. Cross-sectional studies or prevalence studies (surveys) are carried out at a certain point in time and in a given geographical area. They depend on a single examination of a cross-section of the population in which sick and healthy are not distinguished until results are examined. From a well defined population, disease status and exposure are assessed simultaneously.

3.4 Period of study

The study was conducted from October 2012 to June 2013.

3.5 Sampling and samples size

Dar es Salaam region was conveniently selected because there are 364 retail pharmacies and 234 DLDM, therefore appropriate for the intended sample size of 241 [i.e. 147 pharmacies and 94 DLDM], they were obtained by calculating 30% of eligible participants within the strata population plus 10% for attrition rate. 61 Pharmacies out of 151 and 24 DLDM out of 60 in Ilala, 24 Pharmacies out of 59 and 46 DLDM out of 114 in Temeke and 62 Pharmacies out of 154 and 24 DLDM out of 60 in Kinondoni. They were selected by simple random sampling technique using computer software package from a strata population list, to have equal representation of Pharmacy and DLDM. Questionnaires, simulated client who was requesting prescription medicine without prescription, physical observation of prescription book and prescriptions collected and retained for the whole year 2012, were used to interview medicines dispenser in the pharmacy and in the DLDM. The views of the stakeholders [i.e. MSH and PST] and specific organizations [i.e. MoHSW and Regulatory authorities i.e. PC and TFDA] relevant to this study were sought.

3.6 Inclusion criteria

All medicine dispensers in retail medicine outlets were included into the study.

3.7 Exclusion criteria

Medicine dispensers in retail medicine outlets who were not willing to participate on the study and those in wholesale medicine outlets were excluded from the study.

3.8 Instrument and pre-testing

Prior to the study, a pilot testing of questionnaire's validity and appropriateness were carried out by interviewing medicine dispensers from 10 medicine outlets which have not been selected into the study, but which have similar level of service in order to fine tune the questionnaires. Thereafter, pre-tested tools were revised and restructured for data collection.

3.9 Data collection procedure

After receiving a letter of permission from Research and Publications Committee of MUHAS to conduct a study, the purpose of the study were explained to participants both verbally and by covering letter which was attached with consent form and ethical clearance. Simulated client was the first to enter into a medicine outlet on the way to request prescription medicine without prescription. Then, questionnaire was given to those who agreed to participate in the study; they were requested to complete and return it back immediately and respond to the questions asked by principle investigator about physical observation of prescription book and prescriptions collected and retained at the facility for the whole year 2012. Those who were very busy at that moment, questionnaires were left to them and were collected after a few days for analysis. The views of the stakeholders [i.e. MSH and PST] and specific organizations [i.e. MoHSW and Regulatory authorities i.e. PC and TFDA] relevant to this study were sought.

3.9.1 Data Collection Technique;

Data collection was done by the Principal researcher.

3.9.2 Tools

3.9.2.1 Simulated client;

Simulated client was the first to enter into a medicine outlet to inquire prescription medicine without prescription. He/ She ask first the price, and then requested for the dose of the prescription medicines. The medicines which were requested without a prescription were ALU, Amoxicillin capsules, Ampicillin capsules or Ciprofloxacin tablets. He /She then told the medicine seller that he/ she was going out of the medicine outlet to get the money, but never came back to buy the medicines.

The goal of the simulated client was to aggregate the real situation of what is happening in the medicine outlets by observing participants, from the perspective of gaining social empathy. Those who agreed and/ or disagreed to dispense prescription medicines without a prescription, questionnaire was marked at the back by putting whether a tick or cross respectively after exit from the medicines outlet.

3.9.2.2 Structured questionnaire;

Two different structured questionnaires were used to collect data, one from medicine dispensers and the other one from stakeholders and authorities. Questions in Annex I; apart from gathering other demographic data, also was designed to assess the qualification of the medicine dispenser and whether he / she had attended ADDO training.

3.9.2.3 Physical observation of the prescription book;

Annex I; It was designed to capture observable information which helped to position medicine outlets into five categories depending on the utilization of prescription. The task was achieved by physical observation of prescription book and by counting entry of the prescription medicines written in book for the period of one month in a year 2012. Category A has zero entry, Category B has entries up to 12, Category C has entries up to 24, Category D has entries up to 60, and Category E has entries more than 61 per year, see table 1 below.

Table 1 Prescription book category score chart

CATEGORY	RANGE	REMARKS
A	Nil	Very Poor
B	1 – 12	Poor
C	13 – 24	Average
D	25 – 60	Good
E	61 >	Excellent

3.9.2.4 Physical counting of the retained prescription;

Retained prescriptions in the medicine outlet for the whole year 2012 also were used to position the medicine outlets into five categories. The assessment was done by physical counting of the prescriptions retained. Category A has zero prescription count, Category B has up to 12 prescriptions count, Category C has up to 24 prescriptions count, Category D has up to 60 prescriptions count, and Category E has prescriptions count more than 61 per year, as shown in table 2 below.

Table 2 retained prescription score chart

CATEGORY	RANGE	REMARKS
A	Nil	Very Poor
B	1 – 12	Poor
C	13 – 24	Average
D	25 – 60	Good
E	61 >	Excellent

3.9.2.5 Other factors contributing to prescription challenges encounter medicine outlets

Annex I was also designed for collecting data on the other prescription challenges facing community medicine outlets by using fixed-response questions [e.g. yes or no, multiple choice, Likert scale questions] and open ended question too.

3.9.2.6 Views of the stakeholders to improve delivery of pharmaceutical services

Annex III was designed for an In-depth interview qualitative data collection, characterized by asking respondent a series of open-ended questions or raising topics for discussion. While using a fixed list of interview questions guide, and then allow respondent to present his / her view or ‘tell his / her story.’ The goal here was to obtain narrative data in the respondent's own words.

3.10 Ethical considerations

Ethical clearance was obtained from Muhimbili University of Health and Allied Sciences Research and Publication Committee. Permission to conduct the study in the selected facilities was sought from the respective owner or authority, then participants of the study were informed on the purposes of the study, and they were asked if they were willing to participate in the study. Written consent from the study participants was then obtained. No names of study participants were recorded in the questionnaires and confidentiality on their information was highly maintained.

3.11 Data management and analysis

All the data collected were counter-checked for their clarity and validity, and were analyzed using mixed quantitative and qualitative methods. The coded data were analyzed using Statistical Package for Social Sciences [SPSS Version 20.0] computer analysis software. Frequency tables and Chi-squared test analytical methods were used to analyze the data.

A probability [p] value, $p < 0.05$ considered the observed outcome is statistically significant and $p > 0.05$ considered the observed outcome is statistically insignificant.

3.12 Study Limitations

- a) Difficulties in finding the location of medicine outlets which are diversely distributed in urban and peri-urban areas in Dar es Salaam. If found, additional medicine stores that were not in the formal list were included during data collection.
- b) The findings were restricted to only dispensers in community retail medicine outlets of only one region. The findings would have been more meaningful if the study would include prescribers and patients in order to get a better understanding of prescription challenges facing community medicine outlets.
- c) Difficult to make organized comparisons after respondents give widely differing responses that are highly subjective.
- d) Dar-es-Salaam city is an urban area where the study was done. Therefore the findings may under-estimate the worse general situation in the rural areas where infrastructures are poor, insufficient number of professional health workers is common and lack of good health systems.
- e) This study couldn't establish relationship between health financing scheme and equity in accessing medicines.

CHAPTER FOUR

4.0 RESULTS

Out of the 247 administered questionnaires, 228 filled questionnaires were returned to researcher resulting in response rate of 92.3%. The non returned questionnaires were due to different reasons including misplacement in the pharmacies and some were not filled. See table 3 below,

Table 3 Social characteristics distribution of the respondents (n = 228).

Characteristics	Number	Percentage
Type		
Pharmacies	140	61.4%
DLDM's	88	38.6%
Sex		
Male	39	17.1%
Female	189	82.9%
Profession		
Pharmacists	24	10.5%
Pharmaceutical technicians	22	9.7%
Pharmaceutical assistants	10	4.4%
Others*	172	75.4%
ADDO training for others*		
Yes	82	47.7%
No	90	52.3%
Sell of prescription medicines without a prescription.		
Yes	212	93.0%
No	12	5.3%
Missing	4	1.7%

* Others included medical doctor, clinical officers, nurse midwife, and nurse assistants [nurse assistants alone constituted 65.8% of respondents].

4.1 Demographic characteristics summary

Among 228 respondents participated in the study, 61.4% [140] were from the pharmacies and 38.6% [88] were from DLDM. The majority of them 82.9% [189] being female while male were only 17.1% [39]. Professionally, 10.5% [24] of respondents were pharmacists, 9.7% [22] were pharmaceutical technicians, 4.4% [10] pharmaceutical assistants and the rest 75.4% [172] were non pharmaceutical professions [i.e. medical doctor, clinical officers, nurse midwives and nurse assistants]. Among the non pharmaceutical personnel carders who are medicine dispensers 65.8% [150] were nurse assistants. However, 47.7% [82] of all non pharmaceutical personnel participants received training on ADDO. The majority of the medicine outlets 93.0% [212] sell prescription only medicines without a prescription.

4.1.1 Pharmacies that sell prescription medicines without prescription;

A total of 147 Pharmacies were surveyed during the study, 90% of 140 respondents sell prescription-only medicines without prescriptions in Dar es Salaam. The results are summarized in the table 4 below;

Table 4 Shows sell of prescription only medicines in pharmacies (n=140)

Districts	Sell of prescription medicines without a prescription			Total
	Yes	No	Missing	
Kinondoni	54	2	2	58
Ilala	51	8	-	59
Temeke	21	2	-	23
Total	126 (90%)	12 (8.6%)	2 (1.4%)	140

4.1.2 DLDM that sell prescription medicines without prescription;

A total of 94 DLDM were surveyed during the study, 97.7% [86] of all 88-respondents sell prescription-only medicines without prescriptions in Dar es Salaam, while 2.3% [2] their information on the prescription medicines without prescription was misplaced. The details are shown in the table 5 below;

Table 5 Shows sell of prescription only medicines in DLDM (n=88)

Districts	Sell of Medicines without a prescription		Total
	Yes	Missing	
Kinondoni	24	-	24
Ilala	20	-	20
Temeke	42	2	44
Total	86 (97.7%)	2 (2.3%)	88

4.1.3 Qualified personnel available on the community medicine outlets;

The qualified personnel as medicine dispensers include pharmacists, pharmaceutical technicians, pharmaceutical assistants and others [including pharmaceutical auxiliary owning a certificate of dispensing]. The study has found that 47.7% [82] of all non pharmaceutical personnel respondents attended ADDO training [see table 3 above]. Therefore, the study has found that there were few respondents that qualified as medicine dispensers. See table 6 below;

Table 6: Summarizes qualification of non pharmaceutical medicine dispensers

Profession status	Addo training		Total (n=172)
	Yes	No	
Clinical officer	3	6	9
Nurse midwife	6	6	12
Assistant nurse	73	77	150
Medical Doctor	0	1	1
Total	82 (47.7%)	90 (52.3%)	172

4.2 Operation and Inspection of medicine outlets by PC.

The majority of the medicine outlets 70.6% [161] have been in operation for more than two years, 12.7% [29] operated for less than two years, 9.2% [21] operated for less than a year and 7.5% [17] for less than six months. Despite the length of operation of the medicine outlets, only 41.2% [94] of medicine outlets were inspected more than twice a year, 26.3% [60] were inspected twice a year, 22.4% [51] were inspected only once, and 10.1% [23] were not inspected at all for the whole year 2012. See figure 1 and 2 below;

Figure 1: Shows length of operational of the medicine outlets (n=228)

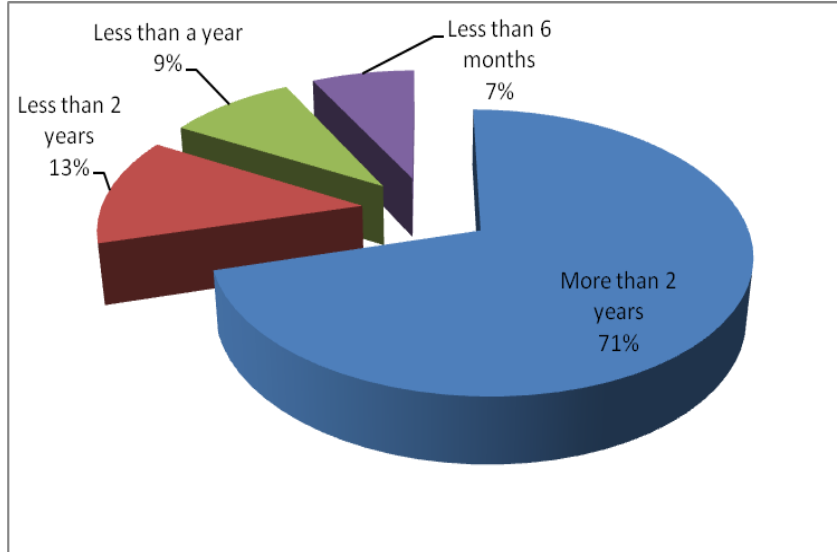
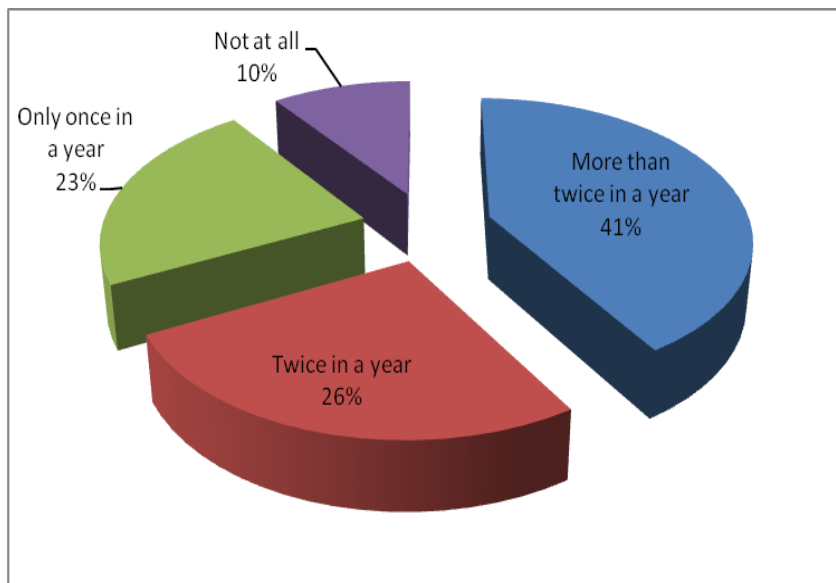


Figure 2: Shows inspections and monitoring of the medicine outlets by PC per year (n=228)



4.3. Prescription book and Prescription copies

4.3.1 Prescription book

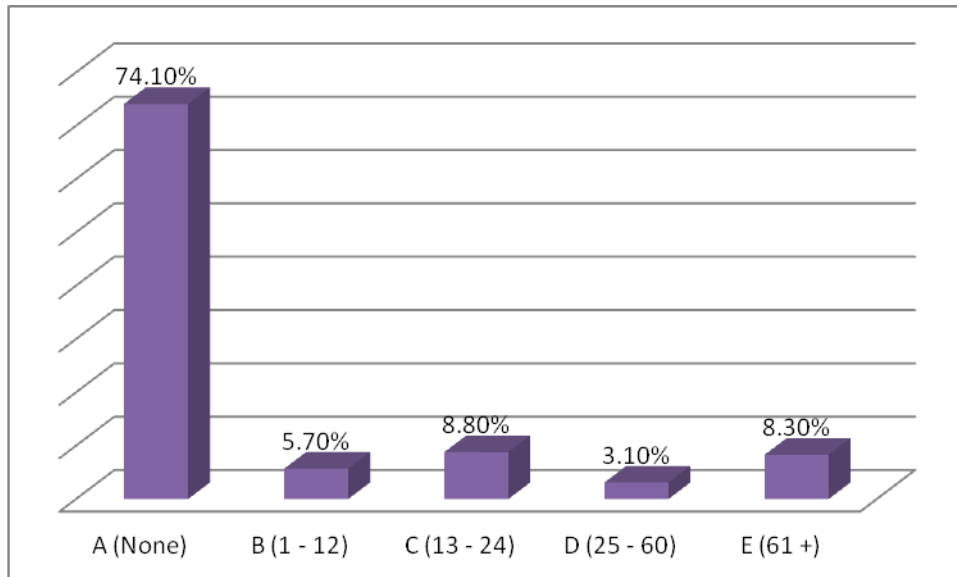
Out of all medicine outlets 228 participated in the study, only 38.2% [87] have shown to have prescription book. But, the majority 74.1% [169] in category A, that have no record entry in their prescription book, it includes 61.8% [141] that absolutely had no prescription book and 12.3% [28] that their prescription book had no record written, 5.7% [13] in category B that had a range of 1 – 12 record entries in their prescription book, 8.8% [20] in category C that had a range of 13 – 24 record entries in their prescription book, 3.1% [7] in category D that had a range of 25 -60 record entries in their prescription book, and 8.3% [19] in category E had a range of 61 and above record entries in their prescription book per month, look at the table 7 below;

Table 7: Shows categorical results of medicine outlets keeping record in prescription book

Questions	(n=228)	Respondents with the positive responses	
		Number	Percentage
Drug outlets having Prescription book			
Entry recorded per month			
Category			
A	(No entry)	169	74.1%
B	(1 - 12)	13	5.7%
C	(13 – 24)	20	8.8%
D	(25 – 60)	7	3.1%
E	(61+)	19	8.3%

Futhermore figure 3 below shows pictorial presentation of the categories of medicine outlets which keep prescription records in the prescription book.

Figure 3: Pictorial presentation of categories of medicine outlets which keep prescription records in the prescription book (n=228)



4.3.2 Retention of Prescription copies

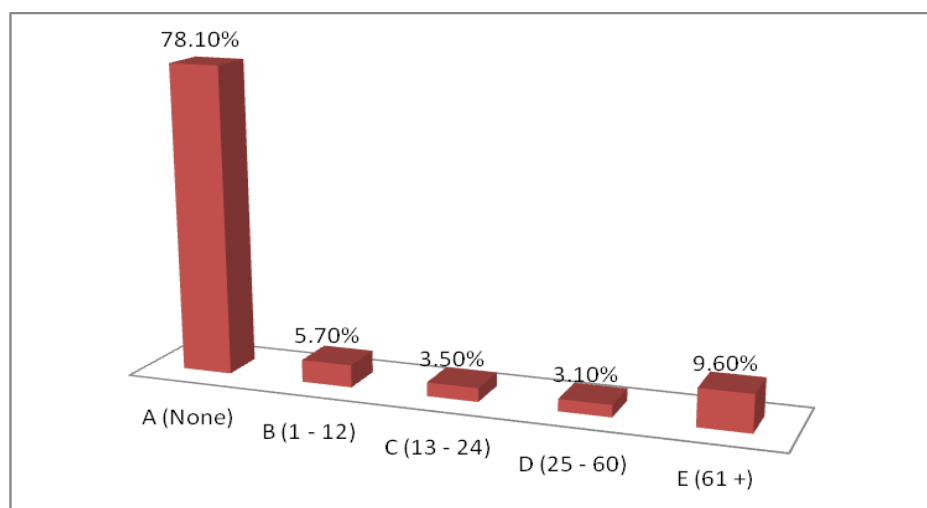
However, 32% [73] of medicine outlets retained prescription copies for the whole year 2012. But, the majority 78.1% [178] in category A had no prescription copy retained, which includes 10.1% [23] of those who prior to this study agreed that they retained copies of prescriptions but they were not. 5.7% [13] in category B had a range of 1 – 12 prescription copies retained, 3.5% [8] in category C had a range 13 – 24 prescription copies retained, 3.1% [7] in category D had a range of 25 – 60 prescription copies retained, and 9.6% [22] in category E had a range of 61 and above prescription copies retained per year. Table 8 below shows the results,

Table 8: Shows categories of medicine outlets which retained prescription copies per year

Respondents with the positive responses			
Questions	(n=228)	Number	Percentage
Drug outlets which retained Prescription copies		73	32.0%
Prescription copies retained per year			
Category			
A	(No copy)	178	78.1%
B	(1 – 12)	13	5.7%
C	(13 – 24)	8	3.5%
D	(25 - 60)	7	3.1%
E	(61+)	22	9.6%

Moreover, figure 4 below give a bar chart summary of the results in table 8 above.

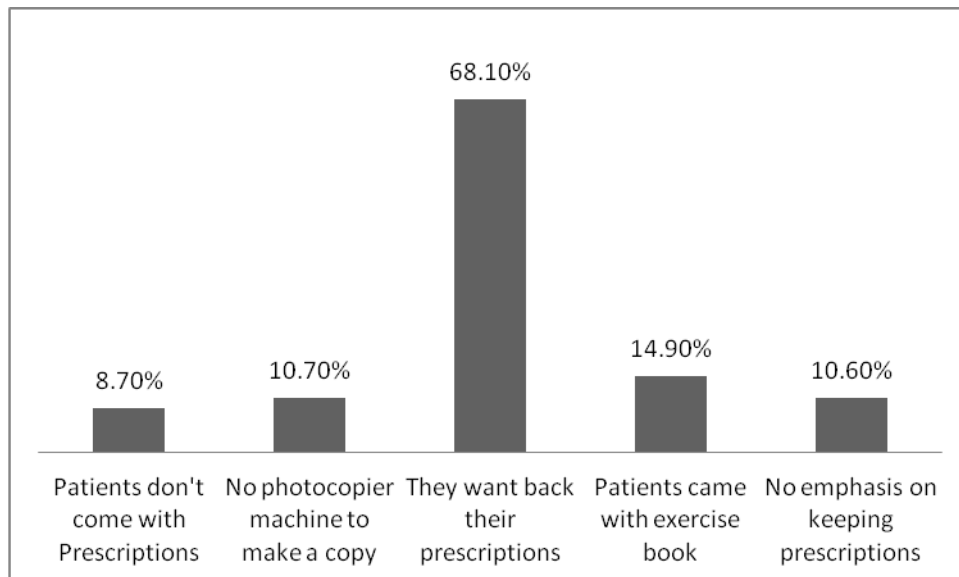
Figure 4: Summary of prescription copies retained per year



4.4 Reasons given for not retaining prescription copies

The following distribution of responses were observed when respondents responded to the question why there were no retained prescriptions; the majority 68.1% [32/ 47] of respondents said that, the clients wanted their prescription back after they had received the medicines. Other patients did not come with prescription; no photocopier machine in the outlet for making photocopies; patients came with prescription written in exercise books; and also no emphasis from the regulatory body about keeping prescriptions. See figure 5 below;

Figure 5: Frequency of Reasons given for not retaining prescription copies (n = 47)

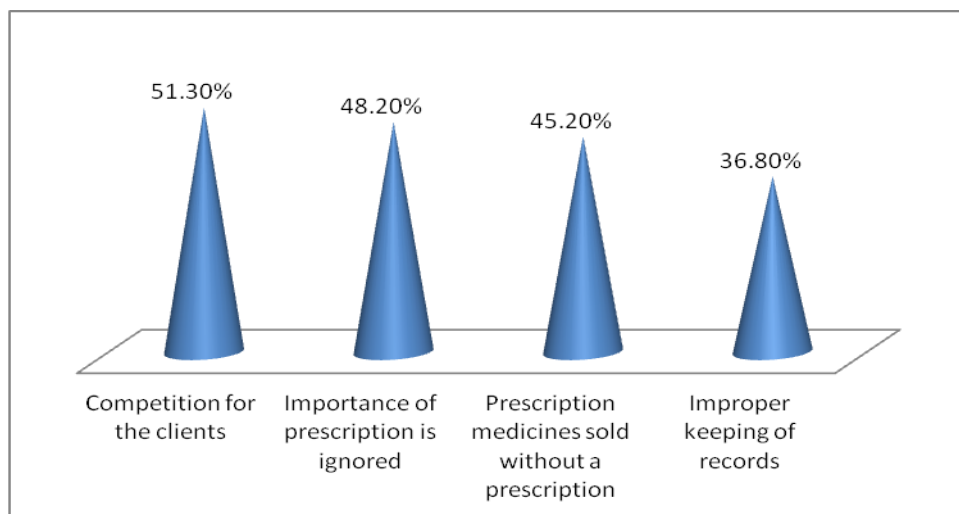


4.5.0 Factors and reasons which contribute to the prescription challenges

4.5.1 Opening of a new medicine outlets closer to the other one

Majority of the respondents 51.3% [117] agreed that opening of the new medicine outlets closer to the other one cause competition for the clients. Other results of the minority concerning the scenario are shown in figure 6 below.

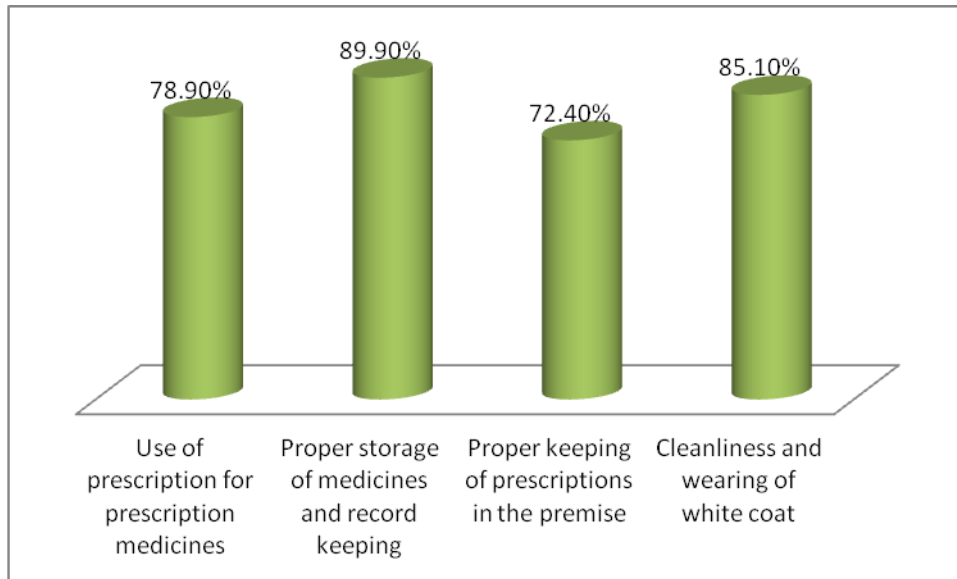
Figure 6: Shows results of opening new medicine outlets closer to another one



4.5.2 Effective inspection and monitoring on medicine outlets have a positive impact on the dispensers' performance.

The majority of the respondents i.e. 89.9% [205] agreed that inspection and monitoring improved proper storage of medicines and record keeping, however 78.9% [180] responded that it would improve use of prescription for prescription only medicines, 72.4% [165] responded that it would improve proper keeping of the prescription copies at the premise, and 85.1% [194] also responded that it would improve cleanliness and routine wearing of white coats as shown in figure 7 below.

Figure 7: Shows results of effective inspection and monitoring of medicine outlets



4.5.3 Reasons given for clients demanding prescription medicines without prescription

The reasons given were as follows; 49.6% [113] of the respondents agreed on the distance from home to hospital as a reason for clients to go to the nearest medicine outlet to request prescription medicines without prescription rather than going hospital where by finally clients might end up getting no medicine.

Moreover 40.4% [92] of the respondents agreed on the economic status of an individual as a reason for clients to go to the medicine outlets demanding prescription medicines without prescription due to inability to pay both for medical consultation and drugs, proximity of the medicine outlets to the home, and availability of medicines.

About 39% [89] of all respondents were strongly agreeing on the consultation and diagnostic charges being the reason for the clients demanding prescription medicines without prescription.

Nevertheless, 43% [98] of all respondents strongly agreed on the time taken at hospital as a reason causing client to go to the nearest medicine outlets rather than to go to the hospital. However, these results were further dichotomized into agree and disagree (where undecided

were grouped into disagree). These results shows that over seventy percent of respondents agreed that distance from home to hospital, economic status of an individual , consultation and diagnostic charges and time spent at hospital were other factors contributing to prescription challenges that clients do not come with prescription at medicine outlets [See table 9 below].

Table 9 Shows results of factors contributing to prescription challenges (n=228)

Sn	Factors	Response s	Value (%)	Dichotomized	
				Agree	Disagree
1	Distance from home to the hospital	SA	60 (26.3%)	Agree	75.9%
		A	113 (49.6%)		
		U	16 (7.0%)	Disagree	24.1%
		D	23 (10.1%)		
		SD	16 (7.0%)		
2	Economic status of an individual	SA	75 (32.9%)	Agree	73.2%
		A	92 (40.4%)		
		U	10 (4.4%)	Disagree	26.8%
		D	26 (11.4%)		
		SD	25 (11.0%)		
3	Consultation and diagnosis charges	SA	89 (39.0%)	Agree	72.8%
		A	77 (33.8%)		
		U	13 (5.7%)	Disagree	27.2%
		D	31 (13.6%)		
		SD	18 (7.9%)		
4	Time spent at hospital	SA	98 (43.0%)	Agree	75.0%
		A	73 (32.0%)		
		U	10 (4.4%)	Disagree	25.0%
		D	29 (12.7%)		
		SD	18 (7.9%)		

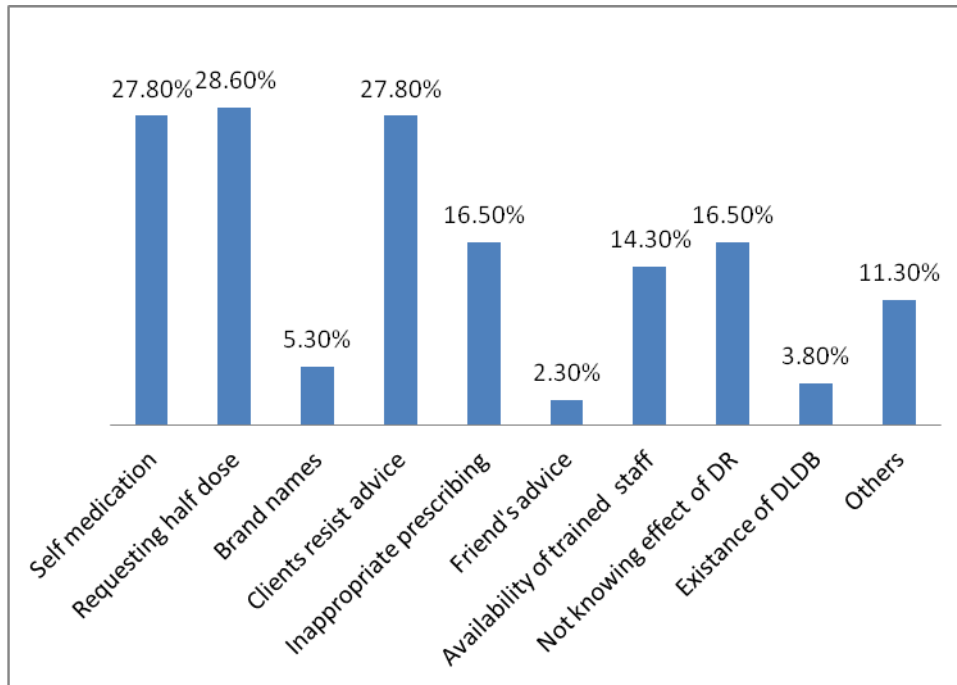
Where; SD - strongly disagrees, D – disagree, U – undecided, A – agree, and SA – strongly agree

4.6 Prescription challenges mentioned by the respondents;

Among the respondents, 16.7% [38] mentioned that there were those who came at the medicines outlet requesting half dose, while 16.2% [37] be clients looking for self medication and 16.2% [37] be clients resistant to professional advices [shown in the figure 8 below]. However, there were other additional issues like communication gap between regulatory body and medicine sellers, inadequate health services in the government hospitals [i.e. no essential medicines, bureaucracy etc], and insufficient performance of medicine sellers were also mentioned.

Figure 8: Summarizes prescription challenges facing community medicine outlets

(n = 133)



4.7 Opinions of the stakeholders intended to improve delivery of pharmaceutical services

A total of 6 respondents did an in-depth interview, all agreed on having prescription challenges. But, in order to improve delivery of pharmaceutical services to the society, the following were the opinions of the stakeholders concerning prescription challenges facing community drug outlets, 1st respondent said;

Yes I agree it is a challenge, but the use of laws and regulations to drug dispensers should frequently be emphasized and stick on to it, together with supportive supervision. Moreover medicine dispensers [ADDO] were given knowledge just for a short period of time about 5 weeks [Pharmacist, MoHSW, Male, 38 years old]

This was supported by another respondent number 5, who reported that;

Surely I agree it is a big challenge. We have sufficient laws, but unfortunately are not followed; for example dispensaries/ hospitals are required to handle medicines according to the level of the facility as directed in the guideline, and also some of the dispensaries have advanced to the level of having specialists [e.g. gynecologist, neurologist etc] that require certain medicines which are under direct supervision of the pharmacist, but that is not always the case.

However, all regulatory bodies [such as PC, MAT, TANA etc] should sit together to discuss on the prescription challenges facing health system, in order each regulatory body should thoroughly take time to observe and abide on the measures required to solve the problem at the carder level. Otherwise we will be solving a problem at one carder only which is correct, because this is the problem of the system. [Administrator, Regulatory body, Female, 53 years old]

Moreover, respondent number 6 argued that;

There is a problem, but before 2011, TFDA were responsible in monitoring, designing, distribution and use of the prescription. Then from 2011 PC is the only one that monitors all of these activities. In both periods the supervisions were not as such effective as it was supposed. Currently the main problem facing PC is that, they can

not inspect the performance of prescribers, because they are under another regulatory body. For example, who is responsible for controlling the number of prescriptions given to a certain doctor? This problem of selling prescription only medicines without a prescription has advanced so much in our society. Who is responsible, any way, to bring to justice both pharmacists and doctors due to their faults? Or how many have already been brought to justice for their misconduct? Therefore, as there is none who has been jailed for selling prescription only medicines without a prescription, nor who just prescribed in a piece of paper, or who resists giving a prescription to a patient has suffered the consequences of his/ her conducts, that is why the problem has been escalating.

However, national health insurance guideline requires that all medicines are available in the hospitals, and therefore very few clients or none will appear at the pharmacy with a prescription searching for the medicines.

He continued by saying, what should be done next?

We should develop an organization which will be regulating both professions that is pharmacists and medical doctors, and also, it will be responsible for monitoring, designing, preparation, distribution and use of prescription for prescription only medicines at all levels by using its number. Generally, professional practice of pharmacy and medicine are supervised by PC and MAT respectively. However, the new organization would be overseeing the conducts of both professions simultaneously, otherwise the problem would not end [Director, Regulatory authority, Male, 42 years old].

It was also reported that there was poor emphasis from the Ministry of Health to other segments of health sector;

There was delay from the Ministry to sensitize private hospital on the use of prescription as it was done on the initial stage of ADDO implementations. Some doctors resist giving prescription to patients, and some even sell medicines from their

pocket, and hence the medicine dispensers are forced to dispense prescription only medicines without prescription. [Principal Pharmacist, MoHSW, Male, 56 years old]

Regarding the current situation, respondent number 4 said the following;

Yes, it is a big challenge, and what is needed is to abide to laws and regulations at different professions. First of all we need to ask ourselves why dispensers dispense prescription only medicines without a prescription, because;

We have dispensing doctors at the hospital/ dispensary [i.e. having their own medicines], which causes the occurrence of prescribing dispensers because they don't get client from the hospital.

And again, since there is no standard prescription used, so any body else can use paper given by medical representatives to prescribe. However, we have spoken early to the government about the availability of the standard prescription at all levels, but there is no any action that has already taken while magnitude of the problem increases. It seems we miss the right audience to disseminate this information. Off course prescription is the right of the patient to have, and it should not just be written in any paper.

There is no inspection to private dispensaries, as a result some of the prescribers do not give patient a prescription [i.e. no right over it], instead they have to get medicines right there [otherwise you go for self medication]. Also, the dispensing window of the private facility should be inspected both; by type of medicines they possess and by qualification of their dispensers.

I don't know to what extent internet contributes to self medication, because many people nowadays Google medicine for their disease condition, and they walk looking for it. [Administrator, PST, Male, 52 years old]

CHAPTER FIVE

5.0 DISCUSSION

This study was aimed to investigate prescription challenges facing community medicine outlets in delivery of pharmaceutical services in Dar es Salaam region. The magnitude of the problem that outlets sell prescription medicines without prescription is not well known, and even the current situation is also not well documented.

This study involved the interview of 228 medicine dispensers which is equivalent to more than 30% of them in Dar es Salaam. As far as this study is concerned, medicine dispensers meant those dispensers who are directly involved in pharmaceutical services in the medicine outlets. Among all interviewees, the majorities 65.8% [150] were nurse assistants, 10.5% [24] pharmacists, 9.7% [22] pharmaceutical technicians, 5.3% [12] nurse midwives, 4.4% [10] pharmaceutical assistants, 3.9% [9] clinical officers, and 0.4% medical doctors. For the current pre-requisite requirement for a medicines dispenser should attend continuing education [i.e. ADDO training]. However, in general 47.7% [82] out of all 172 non pharmaceutical participants received training on ADDO while the majority that is 52.3% [90] did not. These qualifications may influence at certain level the quality of judgment on medicines handling in the particular outlets. Therefore, it is indicated that providing continuing education to these personnel is likely to benefit pharmaceutical services, while the government and private institutions training more qualified pharmaceutical personnel.

5.1 Pharmacies that sell prescription medicines without prescriptions.

The result has shown that 90% of the pharmacies in Dar es Salaam sell prescription only medicines without a prescription. This findings are supported by what was observed by (32) who in their study reported that, Pharmacies were the main sources of the self-medicated drugs [n = 272; 90.4%].

The findings from this study are relatively high as compared to a study conducted in Dar es Salaam on Dispensing of Drugs with and without a Prescription from Private Pharmacies (37) who reported that, out of 378 observed customers who visited twenty pharmacies, 64.29% requested a particular drug, 17.46% came in with a health problem seeking for advice, whereas 18.25% presented a prescription from a doctor.

Furthermore, a survey of antibiotic sale behavior in retail chemist shops in Nairobi revealed that about 64% of chemists sell antibiotics without prescriptions from doctors. Most shops sold under dose drugs according to the request of the patient. The practice is more common in peri-urban than city centre chemists (35).

However, the opposite was found in a study in Zimbabwean pharmacies to assess the quality of private pharmacy practice with a focus on the extent of antibiotic sales without prescription in private pharmacies in four Zimbabwean cities. It was found that, a majority (69%) stated that they would never sell an antibiotic without a prescription and very few actually did in spite of a high patient demand (36).

A paper report on Dispensing Drugs without Prescription and Treating Patients by Pharmacy Attendants in Shiraz, Iran (31) showed that [30%] nine out of 30 pharmacies sold Valium tablets on verbal request, and [86.7%] 26 Pharmacies sold Cumadine when the empty bottle of Cumadine was presented to them. Drugs were dispensed by [50%] 15 pharmacies for abdominal pain; by [86.7%] 26 pharmacies for diarrhea; and by [90%] 27 pharmacies for sore throat.

Moreover, the study observed that both females 94.3% [99] and males 77.2% [27] significantly sold prescription medicines without prescription [$p = 0.004$]. Professionally, the study indicates all professionals sell prescription medicines without prescription. Therefore, the study shows an interesting observation that there is a significant association for both pharmaceutical and non pharmaceutical personnel to sell prescription only medicines without prescriptions [$p = 0.0001$].

Generally, despite the fact that pharmacies are located in urban areas where both public and private hospitals are easily accessible, and one would anticipate finding clients coming with prescriptions to the pharmacy, but this was not the case. The study found that the sell of prescription medicines without a prescription were significant manifest, as there were poor collection of prescription copies retained in the pharmacy for the whole year, as well as there were poor records found in the prescription book (22).

These observations on sell of prescription only medicines without prescription among pharmaceutical personnel and non pharmaceutical personnel does not mean that these health professions have the same professional ethics, but rather it shows that there is a prescription problem within the health system that needs to be addressed thoroughly. What was found in the medicine outlets were just a symptom.

However this study has found several reasons concerning the absence of prescription copies at the medicine outlets, the majority of respondents 68.1% [32/ 47] said clients took it back for their references, or to continue with the treatment like injections. And it was also supported by all six stakeholders who said that prescription was the right of the patient to have it, and it should be given by a physician using legally acceptable prescription.

Moreover, this study found that, economic status of individuals plays a major role on accessing health care, in view of the fact that the employees of the government and private sectors [formal sectors] majorities of them have an ability to pay for their health care (12). For those that seen at the medicine outlets are those that are unemployed and of low income i.e. poor and those mostly in need of health care (13). And this study found that such group mostly contributes to 27.8% self medication and 28.6% buying of incomplete doses, as it was reported that 20% bought incomplete doses (37).

Also this study observed that, effective inspection and monitoring of medicine outlets improves; 78.9% use of prescription for prescription medicines, 89.9% proper keeping of prescription in the facility, 72.4% record writing, and 85.1% general cleanliness. Nevertheless, this study has also observed low levels of inspection on medicine outlets, only 41% of medicine outlets were inspected more than twice in a year 2012, 26% inspected twice only in a year 2012, and 23% inspected only once in a year 2012, while 10% were not inspected at all in a year 2012. Generally inspections of medicine outlets were supposed to be done at least quarterly in a year. Therefore, inadequate inspection and monitoring of these outlets contribute to malpractice of medicine dispensers (23).

Another observation from this study is that, the majority 51.3% of the respondents agreed to the fact that opening of medicine outlets at a closer distance from one shop to another, encouraged competition for the clients that came for verbal requests of prescription medicines or that came in with a health problem seeking for advice. If a dispenser persisted asking questions on why the medicines were required, the clients would simply go to the next outlets. But, the process of dispensing medicines must be accompanied by exhaustive instructions regarding medication use in order to detect any restricted ability (dexterity, vision, cognition) and to offer specific support (19).

5.2 DLDM that sells prescription drugs without prescriptions.

This study has found that 97.7% of the DLDM sell prescription only medicines without prescription. The study findings also show that sell of prescription medicines without prescription by both gender and profession was not significant i.e. [p = 0.755] and [p = 0.699] respectively. Meaning that, prescription medicines were equally sold without prescriptions by gender and by profession.

The DLDM are peri-urban located medicine outlets, where accessibility to government and private hospitals are limited and many people don't go to hospital to see the doctor, and if they do, they are not given a prescription. The majorities are poor and are engaged in agriculture

and animal keeping (14), their daily expenditure is less than one USD and the nearest hospital is 10km away from their homes (16). So when they get sick, they would normally go to the nearest medicine outlets to get medical advice for their health problem, than would go to the hospital [see figure 9 below]. Therefore, this scenario causes many to come at the medicine outlets to ask for medical help without prescriptions (15). It was reported by a woman from Igima Village that “if you have an emergency it is not easy to find cash. You might have rice and be ready to sell but when the buyers know you have an emergency they will do everything to lower the price, in the end you will sell even at a very low price” (34).

Figure 9: shows a picture of a DLDM encountered during data collection



However, the study has found that; hospital bureaucracy, frequent medicine stock outs, friend’s advice on medication, and past history medical experiences were among the other prescription challenges that contribute to many people go to the medicine outlets to seek for medical care. Therefore, the medicine sellers dispense prescription medicines without a prescription due to financial status of these individuals.

5.3 Qualified personnel available on the community medicine outlets.

As far as this study is concerned, medicine dispensers meant those medicine sellers who were directly involved in pharmaceutical services in the medicine outlets, had basic knowledge on pharmaceutical sciences; pharmaceutical personnel; or a holder of advanced certificate of secondary education or ordinary certificate of secondary education with at least a pass in science subjects and should have undergone training (38).

This study also found that, 60.5% [138] of all respondents were qualified medicine sellers [that means; it included all pharmaceutical personnel and some of none-pharmaceutical personnel that attended ADDO training]. However 47.7% [82] out of 172 of none-pharmaceutical group who participated into the study were qualified medicine sellers. Therefore the government should train more qualified pharmaceutical personnel in the public and private institutions so as to raise their number.

5.4 Factors contributing to prescription challenges facing community drug outlets in delivery of pharmaceutical services.

There so many prescription challenges facing community medicine outlets in delivery of pharmaceutical services, however, to mention a few that this study have found were as follows; distance from hospital to where an individual lives, economic status of an individual, consultation and diagnostic charges, and the time spent at hospital.

The study found that among the factors contributing to prescription challenges was distance from where an individual lives from a hospital. In Tanzania over 90% of the population lives within 10 km of a health care facility (16).

Other factors include; economic status of an individual, poor people's access to medicines often highly restricted and one third of the world's population is estimated to lack regular access to essential medicines (25). As prepayment schemes are being hailed internationally as part of a solution to health care financing problems in low-income countries (14). It is

identified that the cost of treatment for illness to be the cause of 85% of all cases of impoverishment (13).

Consultation and diagnostic charges; caused many people to go to the nearest medicine outlets than hospitals; People seek care in private drugstores for mild ailments as well as serious diseases. Some of the main reasons include, but are not limited to, inability to pay both for medical consultation and drugs, proximity of the store to the home, availability of medicines and friendliness of the medicines seller (25).

However, it was also observed that the time spent at the hospital contribute to the prescription challenges as many people will go to the nearest medicine outlets than hospitals (34).

CHAPTER SIX

6.1 Conclusion

Despite the existing effort to alleviate the problem of selling prescription medicines without prescription at the level of medicine outlets, yet there is a significant problem of malpractice which has continued within the health system. It has now developed into being a routine within the entire health sector. Since the practice of selling prescription only medicines without prescription in 2007 was approximated to 77% (10), but the current position of selling prescription medicines without prescription is generally 93% which is extremely high. This study has found to be like we are solving the prescription challenges in the medicines delivery points only, while the problem is within the entire health system.

Economic status of individuals which determines accessibility of medicines has been observed to be inadequate. However, the government has to integrate out-of-pocket expenditure for the treatment of common illness for health care of the poor.

Inspections on both medicine outlets and also in the private hospital/ dispensaries were found to be unsatisfactory. However there is a need also to address the critical issues such as dispensing doctors and prescribing dispensers.

Distance from one medicine outlet to the other one has been realized to be a problem. As it was observed in some areas there were so many medicine outlets clustered together, while in the other areas there were not.

The level of data recorded and kept in medicine outlets i.e. in the prescription book and prescription copies was observed to be very poor and it was supported by its absence. Medicine outlets are another place where information can be extracted to conduct a research / survey. Therefore, studies require properly stored statistical data on medicines use and adverse medicine reactions designed for pharmacovigilance.

The number of the qualified medicine dispensers among the pharmaceutical and non pharmaceutical personnel in the medicine outlets was observed to be fairly low. Therefore, the government initiative to increase qualified medicine dispensers should be supported by private institutions as well.

Inadequate commitment and availability of pharmacists at the pharmacy as a consultant, trainer of other co-workers and promoter of public health, it was among the reasons given to cause decomposition of pharmaceutical ethics in the delivery of pharmaceuticals.

Yet, how profit aspirations and internet services contribute to self medication is still not known.

6.2 Recommendations

- MOHSW should establish health guidelines directing private hospitals and dispensaries to prepare and use prescriptions with duplicate copies, to guarantee the provision of best pharmaceutical services.
- MOHSW should use multi-sector approach within the health sector to sensitize all health workers to abide on the use of prescription for prescription only medicines.
- MOHSW should develop an agency that will be responsible for preparation, distribution and monitoring the use of prescription at all levels by using its number and also it will be overseeing the conduct of all professions.
- Pharmacy Council should strengthen its inspection on the medicines delivery points in private and public health facilities both by type of medicines stored and by level of medicine dispensers.
- Pharmacy Council should be firm to enforce the existing laws in order to keep balance between enforcing regulation and performance of the dispensers to ensure access to medicines.
- Each facility should ensure that it has established facility therapeutics committee that is working and functioning well.
- To increase public awareness on the danger of irrational use of medicines like drug resistance /treatment failure, adverse drug reactions. The MOHSW in collaboration with other stakeholders should provide enough copies of educative materials such as brochures, posters, leaflets and media announcements to the public.

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ANNEXES

Annex I: Questionnaires

INSTRUCTIONS

PLEASE USE YOUR TIME TO ANSWER THE QUESTIONS IN THIS QUESTIONNAIRE WITH YOUR BEST CAPABILITY. CIRCLE THE BEST CHOICE. YOU ARE ALLOWED TO CIRCLE MORE THAN ONE RESPONSE WHEN NECESSARY. IF YOU FIND DIFFICULT IN UNDERSTANDING THE QUESTION, PLEASE ASK FOR CLARIFICATION BEFORE ANSWERING.

Name of facility (e.g. pharmacy/DLDM)

Serial number Name of the District

Demographic characteristics;

1. Professional status;
 - a) Pharmacist
 - b) Pharmaceutical technician
 - c) Pharmaceutical assistant
 - d) Clinical officer
 - e) Nurse midwife
 - f) Assistant nurse
 - g) Others, specify

2. Gender
 - a) Male
 - b) Female

3. Have you attended ADDO training?
 - a) Yes
 - b) No

4. For how long the medicine outlet has being operating?
 - a) Less than 6 months
 - b) Less than 1 year
 - c) Less than 2 years
 - d) More than 2 years

5. How many times the medicine outlet has been inspected in the year 2012?
 - a) Not at all
 - b) Only once
 - c) Twice
 - d) More than twice

6. In your pharmacy do you have a prescription book?
 - a) Yes
 - b) No

7. If the answer is Yes for Question 6 above, can I see it?
 - a) Yes
 - b) No

How many prescriptions recorded per month?

8. Do you keep retained prescriptions after medication has been dispensed?
 - a) Yes
 - b) No

9. If the answer is Yes for Question 8 above, can I see it?
 - c) Yes
 - d) No

How many per month / year 2012?

10. If the answer is No for Question 9 above, why?

.....

Indicate by putting a tick (√) in the boxes against each sentence given if your answer is Yes or No;

11. Opening of the new medicine outlets closer to each other;

- a) Causes competition for clients? Yes No
- b) Hence the importance of prescription is ignored? Yes No
- c) Small doses of antibiotics can be sold? Yes No
- d) No proper records of the prescriptions medicines being made? Yes No

12. Effective inspection and monitoring on medicine outlets by regulatory body, would improve

- a) Use of prescription for prescription medicines. Yes No
- b) Proper storage of medicines and record keeping. Yes No
- c) Proper keeping of the prescription in the premise. Yes No
- d) Cleanliness and routine wearing white coat politely. Yes No

13. Indicate by putting a tick (√) to show factors which whether contribute or not to the prescription challenges facing community medicine outlets in delivery of pharmaceutical services.

Sr	Indicators	1	2	3	4	5
A	Distance from where the hospital is located cause an individual to go to nearest medicine outlet rather than hospital.					
B	Economic status of an individual causes an individual to go to nearest medicine outlet rather than hospital.					
C	Increased consultation and diagnosis charges cause an individual to go to nearest medicine outlet rather than hospital.					
d	Time spent at hospital cause an individual to go to nearest medicine outlet rather than hospital.					

Where; 1- I strongly disagrees, 2 – I disagree, 3 – undecided, 4 – I agree, and 5 – I strongly agree

14. Mention other prescription challenges that you know facing community medicines outlets in delivery of pharmaceutical services.

- i.
- ii.
- iii.
- iv.
- v.

Annex II: Questionnaires (Swahili Version)

MAELEKEZO

TAFADHARI TUMIA MUDA WAKO KATIKA KUJIBU DODOSO HILI KWA UANGALIFU.ZUNGUSHIA DUARA CHAGUO SAHIHI.UNARUHUSIWA KUZUNGUSHIA ZAIDI YA JIBU MOJA IKIBIDI. USIPO ELEWA SWALI, PATA MAELEKEZO KABLA YA KUJIBU.

Aina ya duka (Pharmacy au DLDB)

Dodoso namba Wilaya

1. Taaluma ni

- a) Mfamasia
- b) Fundi sanifu madawa
- c) Fundi madawa msaidizi
- d) Daktari msaidizi
- e) Mkunga
- f) Muuguzi msaidizi
- g) Nyingine, eleza

2. Jinsia

- a) Mme
- b) Mke

3. Umeshapitia mafunzo ya ADDO?

- a) Ndiyo
- b) Hapana

4. Kwa muda gani sasa duka lako limekuwa likitenda kazi?

- a) Chini ya miezi 6
- b) Chini ya mwaka 1
- c) Chini ya miaka 2
- d) Zaidi ya miaka 2

5. Ni mara ngapi duka hili limekaguliwa ndani ya mwaka 2012?
- a) Hapana hata mara moja
 - b) Mara moja
 - c) Mara mbili
 - d) Zaidi ya mara mbili
6. Katika duka lako, je kuna daftari la kutunzia kumbukumbu za dawa za cheti?
- a) Ndiyo
 - b) Hapana
7. Kama jibu ni Ndiyo katika swali la 6 hapo juu, je ninaweza kuliona?
- a) Ndiyo
 - b) Hapana
- Kumbukumbu ngapi zimeandikwa kwa mwezi?
8. Je, huwa unazitunza kopi za vyeti vya dawa vilivyobakishwa hapa dukani?
- a) Ndiyo
 - b) Hapana
9. Kama jibu ni Ndiyo kwa swali la 8 hapo juu, je ninaweza kuziona?
- a) Ndiyo
 - b) Hapana
- Ziko ngapi kwa mwezi / mwaka 2012?
10. Kama jibu ni Hapana katika swali la 9 hapo juu, kwa nini?
-
-

Weka alama ya (✓) katika kiboksi cha kila sentensi hapo chini ikiwa jibu lako ni Ndiyo au Hapana.

11. Kufunguliwa kwa duka jipya karibu na duka lako kunasababisha

- a) Kushindania wateja? [] Ndiyo. [] Hapana
- b) Uuzaji wa dawa za cheti bila cheti? [] Ndiyo. [] Hapana
- c) Uuzaji wa dozi ndogo za Antibiotics? [] Ndiyo. [] Hapana
- d) Utunzaji mbaya wa kumbukumbu wa dawa za cheti? [] Ndiyo. [] Hapana

12. Ukaguzi mahiri wa maduka ya dawa unaofanywa na baraza la famasia kunaboresha;

- a) Matumizi ya cheti kwa dawa za cheti [] Ndiyo. [] Hapana.
- b) Utunzaji mzuri wa madawa na kumbukumbu [] Ndiyo. [] Hapana.
- c) Utunzaji mzuri wa vyeti vya dawa dukani kwako [] Ndiyo. [] Hapana.
- d) Usafi na uvaaji wa sare wakati wote wa kazi [] Ndiyo. [] Hapana.

13. Weka alama ya (√) ili kuonesha vigezo vinachochangia au havichangii katika changamoto za vyeti vya dawa vinavyoyakabili maduka ya dawa katika utoaji wa huduma ya madawa.

Na	Vigezo	1	2	3	4	5
a	Umbali kutoka mahali hospitali ilipo kuna sababisha mtu kwenda katika duka la dawa lililopo karibu badala ya kwenda hospitali					
b	Uchumi wa mtu binafsi husababisha mtu kwenda katika duka la dawa lililopo karibu badala ya kwenda hospitali.					
c	Gharama kubwa za ushauri na vipimo vya matibibu husababisha mtu kwenda katika duka la dawa lililopo karibu badala ya kwenda hospitali					
d	Muda mwingi unaotumika ukiwa hospitali husababisha mtu kwenda katika duka la dawa lililopo karibu badala ya kwenda hospitali					

Ikiwa; 1 – sikubali kabisa, 2 – sikubali, 3 – sijui, 4 – nakubali, na 5 – nakubali kabisa

14. Orodhesha changamoto zingine za cheti unazozijua zinazoyakabili maduka ya dawa katika utoaji wa huduma ya madawa

- i.
- ii.
- iii.
- iv.
- v.

Annex III: Questions Guide for Regulatory Authority and Stakeholders

FOR A STUDY THAT INVESTIGATE PRESCRIPTION CHALLENGES FACING COMMUNITY MEDICINE OUTLETS IN DELIVERY OF PHARMACEUTICAL SERVICES IN DAR ES SALAAM REGION.

Name of the organization

Title of respondent

Address

- 1. Community medicine outlets are facing prescription challenge in delivery of pharmaceutical services. What do you comment on that; is it a challenge or not?

.....
.....

- 2. What should have been done in order to improve delivery of pharmaceutical services both in Pharmacies and DLDM?

.....
.....
.....

Probing questions

- 3. Could prescriptions be prepared by a single manufacture or obtained from a single supplier for both public and private hospitals, in order to insure availability of duplicate copies of prescription?

.....
.....

- 4. Is there a guideline that directing private hospital to prepare duplicate copies of prescription?

.....
.....

5. Do we have a specified quality of medicine dispensers? And who are they?

.....

6. What is the purpose of prescription book in the medicine outlets?

.....
.....

7. What is the purpose of retaining prescription copy at the medicine outlets?

.....

8. Depending on the current situation, do you think we need to have prescription book and also to retain prescription at the medicine outlets?

.....

9. Who is responsible to advise the Minister and Government on matters within its remit, including the development of good pharmacy practice?

- a) Pharmacy Council
- b) PST
- c) Both PST and Pharmacy Council
- d) All pharmacists

10. Considering human resources available at Pharmacy Council (PC), can PC work together with TFDA (to form National Regulatory Agency) to promote delivery of pharmaceutical services to the community?

.....
.....

Annex IV: Maswali na Mwongozo kwa Mamlaka na Wadau

KWA AJILI YA UTAFITI KUHUSU CHANGAMOTO ZA VYETI KATIKA UTOAJI WA HUDUMA ZA DAWA KATIKA MKOA WA DAR ES SALAAM

Jina la Taasisi

Cheo cha anayejibu

Anuani.....

1. Maduka ya dawa yanakumbana na changamoto za vyeti vya dawa katika utoaji wa huduma za dawa. Nini maoni yako katika hili, unadhani kuwa ni changamoto au la?

.....
.....

2. Kitu gani kifanyike ili kuboresha utoaji wa huduma za dawa katika maduka ya dawa (i.e. Famasi na DLDM)?

.....
.....

Maswali ya udadisi

3. Je, inawezekana kuwa vyeti vya dawa vikatengenezwa au vikapatikana kutoka kwa msambazaji mmoja kwa ajili ya hospitali Binafsi na za Serilkali, ili kuhakikisha upatikanaji wa vyeti vyenye vivuli vyake?

.....
.....

4. Je, upo mwongozo unaowaelekeza wenye hospitali binafsi kutengeneza vyeti vya dawa vilivyo na nakala?

.....
.....

Je, tunavyo vigezo vya sifa za mtoa huduma za dawa?

.....
.....

5. Madhumuni ya kuwa na daftari la kutunzia kumbukumbu ya dawa za cheti katika duka la dawa ni yapi?

.....
.....

6. Madhumuni ya kutunza vyeti vya dawa katika duka la dawa ni yapi?

.....
.....

7. Kutokana na hali halisi iliyopo hivi sasa, unadhani ni muhimu kuwa na daftari la kutunzia kumbukumbu za dawa za cheti dukani pamoja na kutunza vyeti vya dawa?

.....
.....

8. Ni nani anahusika katika kumshauri waziri na serikali katika mambo yanayoendeleza utendaji bora wa taaluma?

- a) Baraza la famasi
- b) PST
- c) Baraza la famasi na PST
- d) Wafamasia wote

9. Ukizingatia nguvu kazi iliyopo PC, Je PC wanaweza kufanya kazi na TFDA (ili kuunda Chombo cha Taifa cha Usimamizi) ili kuboresha utoaji wa huduma ya madawa kwa jamii?.....

.....
.....

Annex V: Study Participants Informed Consent Form

CONSENT TO PARTICIPATE IN A STUDY ENTITLED “PRESCRIPTION CHALLENGES FACING COMMUNITY MEDICINE OUTLETS IN DELIVERY OF PHARMACEUTICAL SERVICES IN DAR ES SALAAM REGION”

Greetings!

I am Peter John Njalale from Muhimbili University of Health and Allied Sciences. I am involved in a study to investigate prescription challenges facing community medicine outlets in delivery of pharmaceutical services in Dar es Salaam Region

Purpose of the Study

Medicine dispensers will be used in this study to investigate prescription challenges facing community pharmacy in delivery of pharmaceutical services in Dar es Salaam; so that, the findings from this study will help the regulatory authorities to formulate strategic plans that will help to eliminate or minimize these challenges so as to ensure improved delivery of pharmaceutical services.

Participation

If you agree to join the study, you will be required to answer and fill all the questions in the questionnaire which will be provided to you.

Confidentiality

All information we will collect from you will be treated confidentially and will not be used for any other purpose other than this study.

Risks

We do not expect any harm that will happen to you because of joining in this study.

Rights to Withdraw and Alternatives

Taking part in this study is completely your choice. If you choose not to participate in the study or if you decide to stop participating in the study you will continue to be treated normally. You can stop participating in this study at any time, even if you have already given your consent and if for any reason you would wish to come back into the study after withdrawal, we will be ready to accept you to continue with the study. Refusal to participate or withdrawal from the study will not involve penalty or loss of any benefits to which are otherwise entitled.

Benefits

If you agree to take part in this study you will be among those who will contribute towards strengthening delivery of pharmaceutical services in Tanzania. Your information and other's participating in the study will collectively be used by regulatory authorities to strengthen the system which would benefit other Tanzanians. You will receive the new information about this study upon completion.

Who to Contact

If you ever have questions about this study, you should contact the following:

Mr. Peter John Njalale (principal investigator) Muhimbili University of Health and Allied Sciences, P.O. Box 65013, Dar es salaam Mobile phone: 0716 051717 / 0754 568086, or Dr R. S. Malele (study supervisor) Muhimbili University of Health and Allied Sciences, P.O. Box 65013, Dar es Salaam Tel: 022-2150302-6

Also, if you will have questions about your rights as a participant, you may call Prof. Mainen Moshi, Chairman of the College Research and Publications Committee, P.O. Box 65013, Dar es Salaam. Tel: 022-2150302-6.

Signature

Do you agree to participate? *Write the word 'yes' if you agree* _____

I, _____ have read the contents in this form.

My questions have been answered. I agree to participate in this study.

Signature of participant _____

Signature of investigator _____

Date of signed consent _____

Annex VI: Fomu ya Kushiriki kwa Hiari katika Utafiti



FOMU YA KUKUBALI KUJIUNGA KWA HIARI KATIKA UTAFITI KUHUSU
CHANGAMOTO ZA VYETI KATIKA UTOAJI WA HUDUMA ZA DAWA KATIKA
MKOA WA DAR ES SALAAM

Salamu!

Naitwa Peter John Njalale kutoka Chuo Kikuu cha Afya ya Sayansi ya Tiba Muhimbili. Ninafanya utafiti kuhusu changamoto za vyeti zinazoyakabili maduka ya dawa katika utoaji wa huduma ya dawa katika Mkoa wa Dar es salaam.

Malengo ya utafiti:

Wauza dawa watashirikishwa katika utafiti huu wenye nia ya kubaini changamoto za vyeti zinazoyakabili maduka ya dawa katika utoaji wa huduma ya dawa katika Mkoa wa Dar es Salaam.

Ushiriki katika utafiti

Kwa kushiriki katika utafiti huu utatakiwa kujibu kwa kujaza maswali yaliyopo kwenye dodoso utakayopatiwa.

Usiri

Taarifa zote zitakazopatikana kutoka kwako zitakuwa ni siri na hazitatumika sehemu nyingine isipokuwa katika utafiti huu tu.

Madhara

Hatutegemei kitu chochote kibaya kutokea kwa kushiriki katika utafiti huu.

Kukubali kwa hiari kushiriki kwenye utafiti:

Ushiriki kwenye utafiti huu ni kwa hiari. Unaombwa kukubali kwa hiari. Endapo utaamua kutoshiriki au endapo utaamua kujiondoa katika utafiti utaendelea kubaki na haki zako za msingi kama kawaida. Unaweza kujiondoa katika utafiti wakati wowote, na pale utakapotaka kujiunga tena utapokelewa kuendelea na utafiti. Kukataa kujiunga ama kujitoa katika utafiti hakutasababisha adhabu au kupoteza haki yako ya msingi.

Faida za utafiti

Ukikubali kujiunga na utafiti utakuwa mmojawapo wa wale watakaofanikisha kuboresha mfumo wa utoaji wa huduma ya dawa katika maduka yoyote binafsi yadawa Tanzania. Utaaidia kuwawezesha watunga sera na wataalamu wa afya kufanya maamuzi yenye faida kwa umma mzima. Utapatiwa taarifa zozote mpya zitakazopatikana kupitia utafiti huu.

Mawasiliano

Kama una swala lolote kuhusu utafiti huu tafadhali wasiliana na:

Bw Peter John Njalale (mtafiti mkuu) Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, S.L.P 65013, Dar es salaam Simu ya mkononi : 0716 051717 / 0754 568086, au

Dkt R. S Malele (msimamizi wa utafiti) Chuo Kikuu cha Afya na Sayansi ya Tiba Muhimbili, S.L.P 65013, Dar es salaam Simu Na: 022-2150302-6

Kama utakuwa na swala lolote kuhusu haki yako kama mshiriki katika utafiti huu wasiliana na:

Prof Mainen Moshi, Mwenyekiti wa kamati ya Utafiti na Uchapishaji, Chuo kikuu cha Afya na Sayansi ya Tiba, S.L.P 65013, Dar es salaam. Simu Na : 022-2150302-6.

Sahihi kwa wanaokubali

Je, unakubali? Andika ndio kama umekubali _____

Mimi, _____ nimeisoma fomu hii na kuelewa lengo la utafiti huu na maswali yangu yamejibiwa na sasa nakubali kwa hiari kujiunga na utafiti huu.

Sahihi ya mshiriki _____

Sahihi ya mtafiti mkuu _____

Tarehe ya kusaini _____