CHALLENGES OF MEDICINES REGISTRATION PROCESS IN TANZANIA

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By

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A Dissertation Submitted in Partial Fulfilment of the Requirements for the MSc Programme (Pharmaceutical Management) of Muhimbili University of Health and Allied Sciences

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CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled "***Challenges of Medicines Registration Process in Tanzania***" in (partial) fulfilment of the requirements for the degree of Master of Science in Pharmaceutical Management of Muhimbili University of Health and Allied Sciences.

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Prof. Appolinary A. R Kamuhabwa, phD

Supervisor

_____

Date

DECLARATION AND COPYRIGHT

I, **Sonia Henry Mkumbwa**, hereby declare that this **dissertation** is my own original work and it has not been presented nor will it be presented to any other University for similar or any other degree award.

Signature ……..... Date ……

ACKNOWLEDGEMENT

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DEDICATION

*This work is dedicated to my lovely sons Mclaren and Louis for them to work hard in their lifetime and depend on **GOD** alone as source of inspiration and sustainer.*

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LIST OF ACRONYMS

ADR	Adverse Drug Reaction
AIDS	Acquired Immunodeficiency Disease Syndrome
ANVISA	Brazilian National Health Surveillance Agency
API	Active Pharmaceutical Ingredient
CI	Confidence Interval
CNF	Committee on the National Formulary
CTD	Common Technical Document
DMC	Director of Medicines and Cosmetics
EMEA	European Medicines Agency
EU	European Union
FDCs	Fixed Dose Combinations
FPP	Finished Pharmaceutical Product
GMP	Good Manufacturing Practice
HIV	Human Immunodeficiency Virus
ICH	International Conference on Harmonisation
MIS	Management Information System
MMCR	Manager of Medicines and Cosmetics Registration
MOHSW	Ministry of Health and Social Welfare
MRA	Medicines Regulatory Authority
MSH	Management Sciences for Health

MUHAS	Muhimbili University of Health and Allied Sciences
NCEs	New Chemical Entities
ND	Neglected Diseases
NDP	National Drug Policy (Tanzania)
NMP	National Medicines Policy
ODL	Orphan Drug Legislation
PDPs	Product Development Partnerships
PEPFAR	US President's Emergency Plan for AIDS Relief
QC	Quality Control
R&D	Research and Development
SOP	Standard Operating Procedure
TB	Tuberculosis
TFDA	Tanzania Food and Drugs Authority
TFDCA	Tanzania Food, Drugs and Cosmetics Act
US-FDA	United States Food and Drugs Administration
WHO	World Health Organization

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ABSTRACT

Background: Medicines are only authorized to circulate in the market after being registered. The Tanzania Food and Drugs Authority (TFDA) has been mandated by the Ministry of Health and Social Welfare (MOHSW) to ensure quality, safety and efficacy of medicines. Since about 70% of medicines are imported from abroad, registration process contribute to the availability of quality, safe and efficacious medicinal products in the country. In this regard the registration process needs to be effective and should avoid unnecessary delays in order to increase the variety of medicines registered in the country.

Study objective: The aim of this study was to identify challenges of medicines registration process in Tanzania.

Methodology: A descriptive cross sectional study design was used to survey the regulatory authority and pharmacies in Dar es Salaam region. Forty one pharmacies were involved in the study. A total of 42 medicines evaluators, 41 pharmacists' in-charge and 41 representatives of manufacturers were interviewed using structured questionnaires. An in-depth interview was conducted to two key informants at the regulatory authority using interview schedule. A designed medicines status form was used to assess dossier applications received in the past two years; 2010 and 2011. A total of 743 dossiers of applications submitted at TFDA during this period were assessed.

Results:

Among forty two (42) medicines evaluators; 33 pharmacists, 4 medical doctors and 5 veterinary doctors were included in this study. Among them 27 had high knowledge regarding medicines registration concept with a statistically significant association between training and knowledge of medicines evaluation ($P = 0.001$). Out of 41 manufacturers' representatives; 11 pharmacists, 25 businessmen, 3 marketing managers, one IT specialist and one economist were interviewed. Among 41 pharmacists in-charge, more than half (61.0%) had low knowledge on medicines registration process with a significant association between training and knowledge of medicines evaluation ($P = 0.007$). The average evaluation time per dossier was found to be 2.98 ± 0.811 days, with 95% CI for

the mean value ranging from 2.169 to 3.791. Majority of evaluators (72.93%) are supported by TFDA management with significant association between management support and payment satisfaction (P = 0.002). Out of 743 applications received in two years, 478 applications were evaluated. Among those, only 170 were registered, 220 rejected, 62 queried and 26 had their status not determined as on April 2013. This indicated that more than half (58.60%) of the applications were either rejected or queried due to poor quality of dossiers submitted. The challenges identified include inadequate evaluators, insufficient payment, lack of regular training of expertise, instability of management information system, insufficient evaluation time, poor submitted dossiers, long registration time and communication gap between applicants and TFDA.

Conclusion and recommendations: Medicines registration in Tanzania is faced with challenges multifaceted from TFDA management, manufacturers and their representatives. Due to inadequate number of evaluators the process of medicines registration has been observed to take longer time than the time of 12 months as suggested in the Client Service Charter. Furthermore, the pharmacist in-charge had limited knowledge on medicines registration concept. Based on these findings, it is proposed that TFDA management should deploy sufficient number of qualified personnel to undertake evaluation activities. The Government through MOHSW and Schools of Pharmacy in Tanzania should review their training curricula in order to impart pharmacist in-charge with knowledge on how to review and prepare dossiers for medicines registration. TFDA in collaboration with Pharmacy Council should provide regular on-job training and continuing professional development to improve pharmacist's knowledge and skills in order to enable them to cope with developments in pharmaceutical science and technology.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

The purpose of this study was to determine challenges faced by Tanzania Food and Drugs Authority during medicine registration. In Tanzania medicine registration is an official authorization or registration of a product by TFDA for the purpose of marketing or free distribution in the country after evaluation for safety, efficacy and quality (TFDA Guideline, 2005). Hence, the objective of evaluation is to ensure that before a medicine is placed on the market there is enough evidence that it has been properly formulated, manufactured and adequately tested and meets the criteria of safety, efficacy and quality.

A medicinal product application dossier is a set of document that consists of data on administrative, pharmaceutical, clinical and labelling of the product. The administrative part gives preliminary information of that medicine, applicant and its manufacturer. The quality part contains detailed information of the active pharmaceutical ingredient(s) (APIs) used and finished pharmaceutical product whereas in ensuring medicines safety and efficacy, these data are provided in the clinical part of the dossier (TFDA Guideline, 2005).

Medicines offer a simple, cost-effective solution to many health problems, provided they are available, affordable, and properly used (Pécoul et al. 1999). Access to health care is a fundamental human right, enshrined in international treaties and recognized by governments throughout the world. Access to essential medicines is one of the UN's Millennium Development Goals. Essential medicines save lives, reduce suffering and improve health, but only if they are of good quality and safe, available, affordable, and properly used (WHO, 2006 and MSH, 2004). However, about 90 percent of deaths occur in developing countries in which 14 million people die of infectious diseases (WHO, 2001). Hence, without equitable access to essential medicines for priority diseases the fundamental right to health cannot be fulfilled (WHO Medicines Strategy, 2007).

Total health expenditure currently ranges from 7 to 66 percent worldwide with proportion being higher in developing countries (24-66 percent) as compared in developed countries

where health expenditure is about 7-30 percent (WHO, 2000). Medicines are costly compared to other consumables (MSH and WHO 1997). In a study conducted in Pakistan and Ivory Coast reported that more than 90% of household health expenditures were related to drugs (World Bank, 1993). Another study conducted in Mali, reported that 80% of household health expenditure was on modern medicines (Diarra and Coulibaly, 1990). In Tanzania pharmaceutical expenditure is about 40 percent of total health budgets, which represent a major out-of-pocket health care cost (HSSP, 2009).

The World Health Organisation (WHO) in 1975 defined essential medicines as those that meet the health needs of the majority of the population. In the last twenty years, many countries have acquired considerable experience in managing medicines supply and experience gained includes establishment of National Medicines Policy that provide its sound foundation (MSH and WHO, 1997). The overall objective of the policy is to make essential medicines available to all Tanzanians at all times which are of good quality, proven effectiveness and acceptable safety at a price that the individual and the community can afford when these are needed to prevent, cure or reduce illness and suffering (NDP, 1991).

Moreover, the private sector contributes about 70 percent of the medicines consumed in Tanzania (NMP, 2012).

1.2 Pharmaceutical Management System

Managing medicines supply is basically organised into four functions which include selection, procurement, distribution and use. In order to achieve its function there is a need to have efficient management support. The entire cycle rests on policy and legal framework that establishes and supports the public commitment to essential medicines supply (MSH and WHO, 1997).

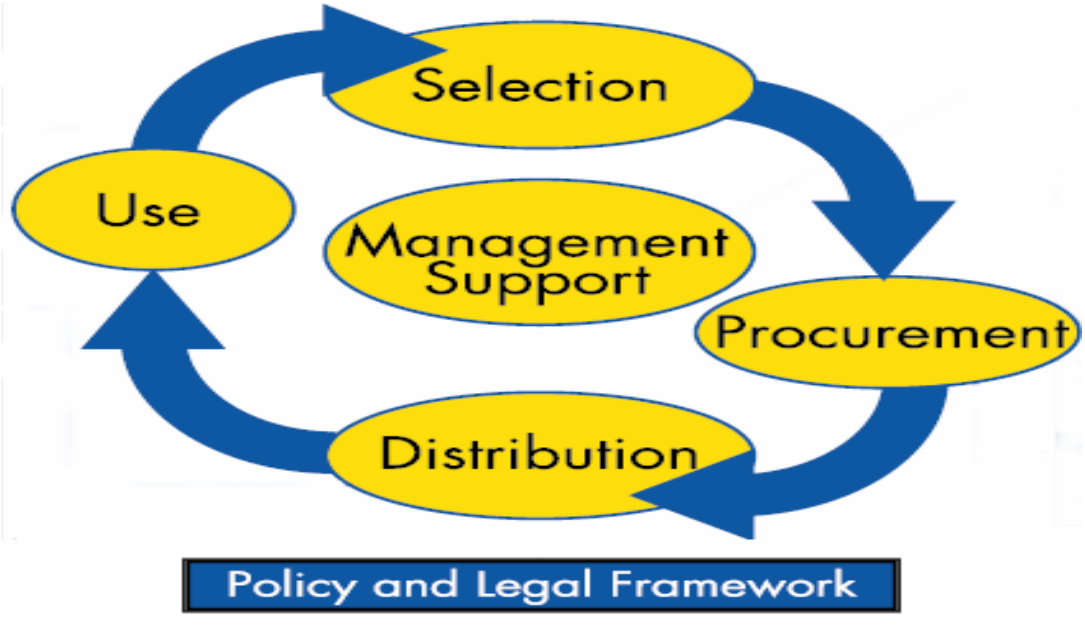

Figure 1: Pharmaceutical Management system

Source: Managing Drug Supply, 2nd Edition of 1997

In Tanzania, the legal framework for medicines regulation is supported by existence of a semi autonomous regulatory body, the Tanzania Food and Drugs Authority (TFDA) which is under the Ministry of Health and Social Welfare. TFDA was established by the Tanzania Food, Drugs and Cosmetics Act No. 1 of 2003 after repealing the Pharmaceuticals and Poisons Act No.9 of 1978. TFDA became operational in July 2003 (TFDCA, 2003). It has the responsibility of controlling the quality and safety of food, medicines, herbal medicines, cosmetics and medical devices.

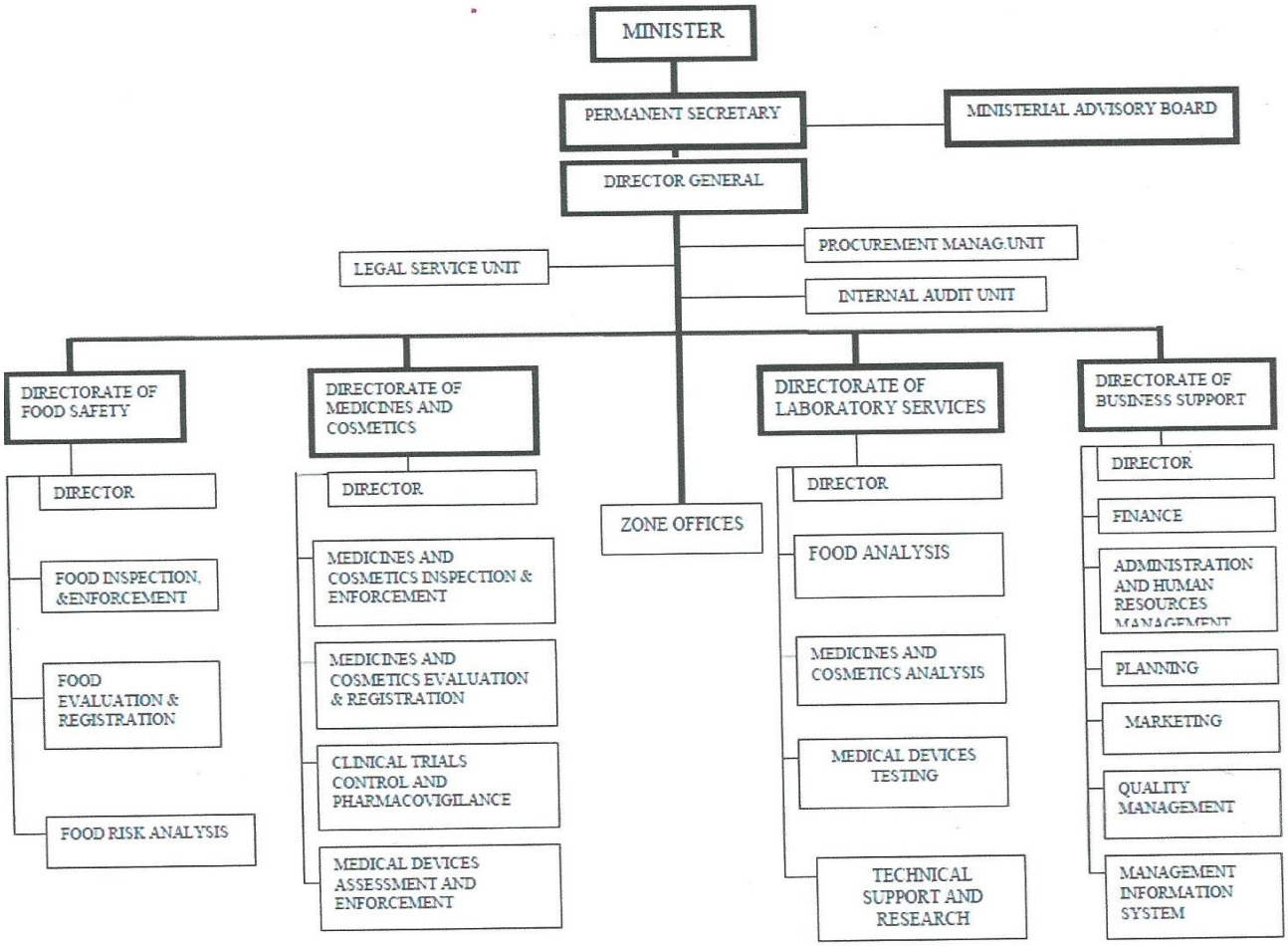

Figure 2: The approved functions and Organisation structure of TFDA

Source: TFDA website (www.tfda.or.tz)

1.3 History of Medicine Registration

The first milestone in the evaluation of new medicines was the introduction of the Pure Food and Drug Act in 1906 in the United States that requires medicines to comply with the standards in the United States Pharmacopoeia and the National Formulary regarding the strength and quality (Barkan, 1985). The Sulfanilamide elixir tragedy in 1937 made a second important landmark in the drug evaluation process in which Diethylene glycol was used as a diluent and 105 patients died due to toxicity that was not tested and hence led to the strengthening of the Pure Food and Drug Act into the Federal Food, Drug and Cosmetic Act, which came into force in 1938 (Wax, 1995).

The law enforced pharmaceutical companies to ensure the safety of their products by conducting toxicology studies, followed by an obligatory submission of these data to the US Food and Drug Administration (FDA) for evaluation (Wax, 1995). During that time most other countries in the world had no controlling mechanism until the thalidomide disaster in the early 1960s that emphasis was placed on the safety of new medicines (Brynner and Stephens, 2001). After the thalidomide disaster, new drug regulatory authorities were established like the Dutch Medicines Evaluation Board and the already existing regulatory authorities were further strengthened (e.g. the FDA). More stringent regulations were put in place and since then manufacturers of new drugs were required to ensure the efficacy, quality, and safety of their products. Therefore, the registration process subsequently became more regulated with more emphasis on the pre-registration phase (Mol et al. 2010).

In the last two decades, medicines regulation had become more organised at international and regional level for instance International Conference on Harmonisation, ICH and European Medicines Agency respectively. Since 1989, about forty guidelines have been harmonised in the European Union, Japan and USA through the ICH and in July 2003 a Common Technical Document (CTD) that assists in medicine application among the three regions was finally implemented (Willemen, 2011; Kidd, 1996). Nowadays, many African medicines regulatory authorities (MRAs) structure their dossier requirements along with WHO guidelines which are very close to the CTD format in respect to their national settings as part of the African harmonisation initiative (Moran et al. 2010). That format is among future plans of the TFDA (DMC-TFDA).

In 1996, the National Drug Authority of Uganda (NDA) embarked on a drug registration exercise. Before then, all drugs imported into the country had not been subjected to a drug registration process. The process has been a control measure to ensure that only drugs of proven quality, safety and efficacy are licensed for importation into Uganda. To date, NDA has registered approximately 4500 human medicines and 450 veterinary medicines (NDA-Uganda, 2012).

In Tanzania, medicines registration also known as marketing approval, marketing authorization or product licensing was gradually introduced through smooth transition that begins with 1-year provisional registration taken as a notification from 1998. The transition period purposely gave ample time for the Pharmacy Board to prepare guidelines to assist applicants and evaluators to respectively submit and evaluate correctly the required information. Following the preparation of the guidelines, the first application was received in 1997 and the first product was registered in April 1999 (TFDA website). During that time a number of applications were received and products were easily available in the market.

After establishment of TFDA, the registration of medicines was made under Section 51 (1) of the Tanzania Food, Drugs and Cosmetics Act, 2003. The act provides conditions under which a medicinal product may be registered in Tanzania that include the availability of medicine to be of the public interest, safe, efficacious and of acceptable quality, the premises and manufacturing operations should comply with the current GMP requirements or any other requirements as may be prescribed by the authority (TFDCA, 2003).

Currently, TFDA has gained expertise and knowledge of medicine evaluation. This knowledge and expertises has led to changes in medicines registration requirements which has resulted in most of dossiers submitted ending up in non conformance, rejection or queried hence prolonged registration time. The delay in registration has created more customer complaints and unavailability of medicines within the medicines supply chain. Subsequently, this has resulted in low level of customers' satisfaction (TFDA's customer satisfaction reports, 2004 and 2008).

1.4 Problem Statement

TFDA is a semi autonomous regulatory body under the Ministry of Health and Social Welfare established by the Tanzania Food, Drugs and Cosmetics Act No. 1 of 2003 after repealing the Pharmaceuticals and Poisons Act No.9 of 1978. TFDA is mandated to regulate and control the quality, safety and efficacy of food, drugs, herbal drugs, cosmetics and medical devices in Tanzania.

Section 51 (1) of the Tanzania Food, Drugs and Cosmetics Act of 2003 provides conditions under which a medicinal product may be registered in the country. Based on this requirement, no pharmaceutical products are allowed to circulate in the market until they are registered (TFDCA, 2003). In Tanzania, about 40 percent of the total health budget is spent on pharmaceuticals, and the health care cost represents a major out-of-pocket expenditure (HSSP, 2009). Furthermore, it has been reported that about 70 percent of the medicines consumed in Tanzania are imported (NMP, 2012).

TFDA Client Service Charter provides guidance for evaluation and registration of a medicinal product in the country. Under normal circumstances it is stipulated that the evaluation of imported medicines should take not more than 250 working days while those locally made should take not more than 180 days (TFDA Customer Service Charter, 2012). Despite the existence of the charter, TFDA has failed to comply with the stipulated timeframes and evaluation can take up to three years.

A study conducted by Bate et al. (2010) reported that there were significant differences in the length of time taken to evaluate registration applications among various drug authorities. The average evaluation period was between three to six months in developing countries while emerging countries (middle income countries like Russia, Brazil, China, India and Thailand) it took 12-18 months.

In Peru, drug approvals or registration were determined within just seven days, this period was found to be faster than even the fast-track registration offered by some countries for priority drugs which still takes at least one month. However, Peru's approach was observed to be flawed, because if a drug application has not been evaluated within seven days of its

receipt, it becomes automatically registered. So, Peruvian Congress in 2009 reviewed the law and required that the timeline for evaluation and registration of medicines be extended to six months (WHO, 2005).

Poor adherence to medicines registration guidelines is another problem that commonly occurs in most of the submitted dossiers. It has been shown that majority of the dossiers fail to adhere to registration guidelines hence submitted dossiers are insufficiently prepared. This problem has been observed to affect the process of evaluation by prolonging registration time or rejection of the dossiers.

Lack of medicines registration knowledge among pharmacist in-charge during their pharmacy course contributes to their failure in reviewing dossier and these results in majority of dossiers submitted failed to meet registration guidelines (Moran et al. 2010). The pharmacist in-charge interview had revealed a gap in dossier review, hence these caused poor adherence to the medicines registration guideline. This problem has been very common among dossier submitted hence affect medicines registration process.

Efficient and effective medicines registration may also be affected by the number and quality of evaluators. Inadequate human resource in terms of number and quality, lack of specialized knowledge and skills may promote delay in registration and eventually rejection of application dossiers.

The records show in recent years TFDA has received a number of complaints from customers who are submitting their application dossiers for the purpose of registration (TFDA customers' complaints file, 2008).

The magnitude of poor adherence to registration guidelines among the dossiers submitted for registration is not well known. The level of knowledge of pharmacist in-charge who are working in pharmacies dealing with medicines registration including dossiers review and preparation is not documented. The knowledge, competency and number of medicines evaluators to effectively and efficiently carry out medicines evaluation need to be assessed. Therefore, it was important to carry out this study so as to identify the challenges that

affect the process of medicines registration so as to propose the necessary interventions in order to improve the registration process in Tanzania.

1.5 Research Questions

1. What is the knowledge level of personnel involved in medicines evaluation and dossier submission?

2. What is the support and budget allocated by TFDA management on the dossier evaluation process?

3. What are the qualities of dossiers undergoing evaluation?

4. To what extent are the submitted dossiers comprehensive with respect to the registration guideline?

5. What are the challenges encountered in medicine registration?

1.6 Objectives of the study

1.6.1 Broad Objective

To assess the challenges of medicines registration process in Tanzania

1.6.2 Specific Objectives

1. To assess the level of knowledge of personnel involved in dossier evaluation
2. To assess the level of knowledge of personnel involved in dossier submission
3. To assess TFDA management support on dossier evaluation process
4. To assess budget allocation by TFDA management on dossier evaluation
5. To assess quality of dossiers submitted for evaluation with respect to the registration guidelines
6. To determine the factors hindering the process of medicines registration in Tanzania

1.7 Rationale of the Study

Generally, in most developing countries, drug regulation is very weak, and the safety, efficacy and quality of imported or locally manufactured drugs cannot be assured. Studies carried out in some countries show that about 20% of tested drug products fail to meet quality standards (Ratanawijitrasin and Wondemagegnehu, 2002). In Tanzania, the private sector contributes about 70 percent of the medicines consumed in Tanzania (NMP, 2012) with majority being imported.

Medicines registration or marketing authorization in Tanzania passed through a transition period that began with a 1-year provisional registration taken as a notification from 1998. The transition period purposely gave ample time for the regulatory authority to prepare guidelines to assist applicants and evaluators to respectively submit and evaluate correctly the required information. Then, by 1997 the first application was received in 1997 and eventually, the first product was registered in April 1999.

Despite existence of drug legislation, regulation, registration procedure and guidelines that support medicines registration in Tanzania, applicants and the authority at large are still facing a number of challenges that prevent smooth medicines registration process.

Thus it is high time to ascertain those challenges perceived by applicants as well as the authority that hinder smooth registration process in Tanzania. Findings from this study may help in the formulation of strategies within TFDA so as to meet its client service charter and also could assist medicines registrant in Tanzania to abide to the registration guideline. Smooth and timely registration could increase the number and quality of registered medicines and therefore increase competition among registered medicines. This could eventually lower prices, increase availability and affordability of essential medicines in the country.

CHAPTER TWO

LITERATURE REVIEW

Drug regulation is a process encompassing various activities aimed at ensuring the safety, efficacy and quality of drugs as well as appropriateness and accuracy of product information (WHO, 1999). The regulation started 50 years back in which regulatory standards were set primarily to ensure the quality of medicinal products (Hill and Johnson, 2004). Eventually, in the early 1960s drug regulation led to the development of standards for testing efficacy and safety of new medicines (Willemen, 2011). Despite the existence of standards for drug regulation for at least 50 years, there are still many problems with the safety and quality of medicines in many countries (Hill and Johnson, 2004).

A WHO (1998-1999) comprehensive multi country 'desk-based' study identified that effective drug registration depends on appropriate legislation with adequate administrative structures, political support, financial and other resources are important in order to ensure the scientific assessment of new products either generic or innovator (Hill and Johnson, 2004).

Moore et al. (1999), Hill and Johnson (2004) and Bate et al. (2010) reported that the critical role of any medicine regulatory agency (MRA), such as the United States Food and Drug Administration (FDA), is to register medicines available for sale to citizens.

In 2007, the State Food and Drug Administration of China revealed that there were 329,613 cases of unlicensed medicines, most of which were manufactured by "fly by night" firms (Bate et al. 2010). A study conducted by WHO (2006) revealed that African medicines regulatory authorities (MRAs) face many challenges with their regulatory capacity being below that of Europe, Latin America and much of Asia. These challenges include lack of a clear legislative framework. Among the 37% of MRAs surveyed it was found that 38 countries were ill-suited or had no functional systems for conducting regulatory functions such as import registration and surveillance of suspected adverse reactions for drugs in the market. Other challenges reported included dispersion of regulatory responsibility in the central government as observed in West African countries.

Most of interventions and initiatives tend to focus on building capacity in specific functions with limited attention to overarching policy and legislative frameworks. There is lack of financial resource to evaluate effectively the quality, efficacy and safety of new pharmaceutical products among African MRAs. Inadequate number and skilled staff as well as lack of political support from many African governments which resulted in limited resources being invested into medicines regulation were also reported. Lack of appreciation of the importance of medicine regulation by other stakeholders, including researchers, developers, government departments and the general public were also reported.

A study conducted in South Africa by Narsai et al. (2010) revealed that most of the regulatory authorities in Africa are resource-constrained; hence there is a need for harmonisation of medicine registration policies that could contribute positively to ensuring the safety, quality and efficacy of medicines. This will reduce barrier to registering and supplying medicines to African countries.

Bate et al. (2010) conducted a study to ascertain performance of registered medicines over those either not registered or not known to be registered. Out of 1940 medicines identified, 1589 registered medicines had failure rate of 5% and 351 unregistered or not known to be registered had failure rate of 37.3%. The study also revealed that African cities had fewer (71%) medicines registered than Indian cities (86.9%) or other middle income cities (89.1%). Samples from African cities performed far worse in quality tests (18.6% failed) than either samples from Indian cities (8.7% failed) or other middle-income cities (3.8% failed). This is an indication that medicines registration is an important component for better-quality medicines.

Belgharbi (2007) reported that over US$2.5 billion were invested globally in research and development of new products for neglected diseases of the developing world. Such products have either recently been registered or are due to be submitted for registration. However, most African medicines regulatory authorities (MRAs) rely on stringent regulators in developed countries to assess novel pharmaceutical products for them. Unfortunately this creates new challenges for regulators in African countries (Moran et al. 2007). Also it has been reported that 90% of MRAs in sub-Saharan Africa were in a

situation which did not allow them to adequately carry out regulatory functions, and thus could not guarantee the safety and efficacy of medicines to be used in their countries (WHO, 2010).

A study by Hill and Johnson (2004) reported that a coordinated approach at country and regional level is the only solution to problem of ineffective legislation to allow use of so-called 'Trade-Related Aspects of Intellectual Property Rights (TRIPs) flexibilities' such as compulsory licensing. The approach can also solve problems such as inadequate quality manufacturing capacity, inadequate regulatory science capacity to assess generic products, inadequate human resources and inadequate funding for drug regulatory activities in developing countries (Moran et al. 2007; Moran et al. 2010).

Moran et al. (2007) stated that the use of well-established Western regulatory authorities like FDA, EMA and Swiss Medic are other current approach designed by Multinational pharmaceutical companies and some Product Development Partnerships (PDPs) to fill the gap observed in registration of medicines in African MRA. However, this process has been observed to cause delaying access and also decisions on product registration are made by regulators who have less experience in tropical disease products, presentations, and epidemiology, and who are not accountable for the needs and safety of target African patients.

A study conducted by WHO (2006) and Belgharbi (2007) reported that among African MRAs, South Africa was observed to be fully functional, however, Nigeria, Zimbabwe, Senegal, Tunisia, Morocco and Algeria though functioning but needed strengthening in regulation of clinical trials. Another study conducted by Moran et al. (2010) reported that over 40 African MRAs were considered insufficiently functional and needed significant capacity building to perform fundamental regulatory tasks however substantial investments and progress have been made by Tanzania and Kenya (WHO, 2006).

Dicko et al. (2007) also reported that 87% of African MRAs could not evaluate biologics such as vaccines and some of African MRAs did not have vaccine registration system. Further, the study reported that US Congress and the European Commission has decreased

regulatory supervision of products that were intended for export and therefore, African MRAs should assess medicines intended for their domestic use.

A study conducted by Ratanawijitrasin and Wondemagegnehu (2002) reported that the time taken to assess and register a product should be long enough to ensure medicines are effectively assessed for safety, efficacy and quality, however should not lead to loss of lives, disincentive to research and development. Moreover, registration time should not be compromised to endangering the health of patients and the public.

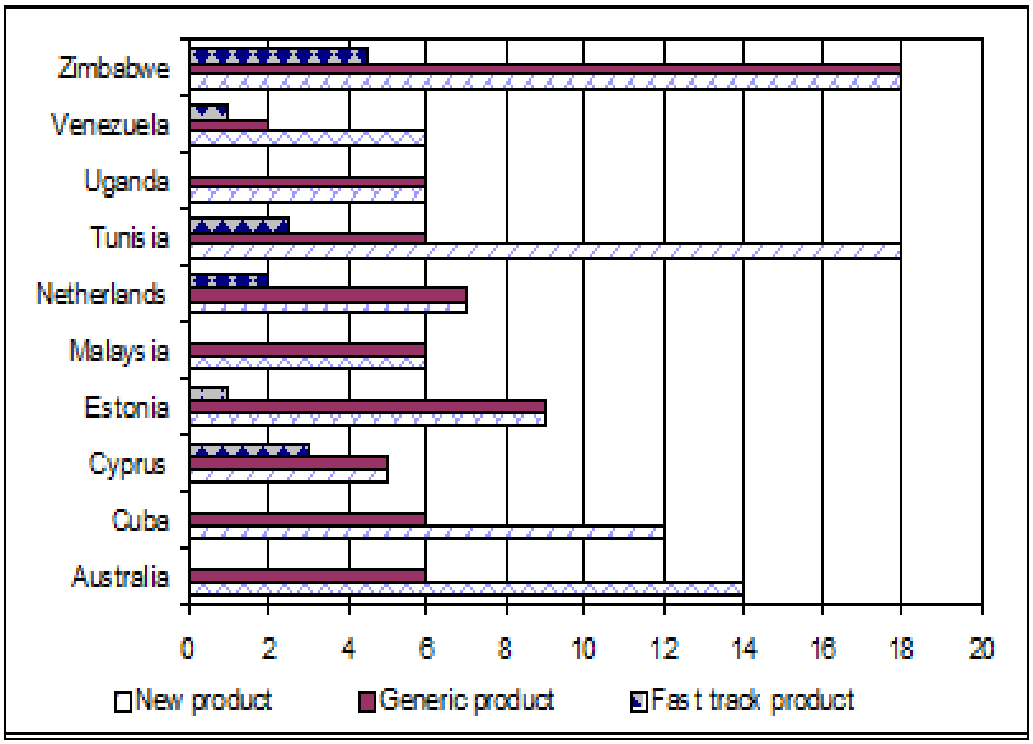

Figure 3: Average registration time (months) for three categories of pharmaceutical products (products containing new chemical entities, generics and fast-track drugs) in the 10 countries, in the year 1994-97.

Source: *Effective drug regulation: A multi-country study* by Ratanawijitrasin and Wondemagegnehu, 2002.

A study conducted by Bate et al. (2010) reported that there were significant differences in the length of time taken by various drug authorities to evaluate registration applications.

The average period was three to six months for developing countries while emerging countries (middle income countries like Russia, Brazil, China, India and Thailand) took 12-18 months.

A study conducted by Homedes et al. (2005) reported that in Peru drug approvals take about seven days, and in case during that period if DIGEMID (Peru's drug regulatory agency) does not respond to the request for approval, the drug is automatically registered. This period is much faster than one month for fast-track registration offered by some countries for priority drugs. From this report, it was concluded that the Peruvian Drug Regulatory Agency should be strengthened to ensure that drugs which are registered meet the quality requirements for the intended use. In Brazil, it was reported that if a system fails to accept or reject a registration application within 180 days of its receipt, that product will automatically become registered. However, since inception of ANVISA in 1999 the drug review process has increased dramatically and two years may be required to obtain a final opinion (Rocha, 2013).

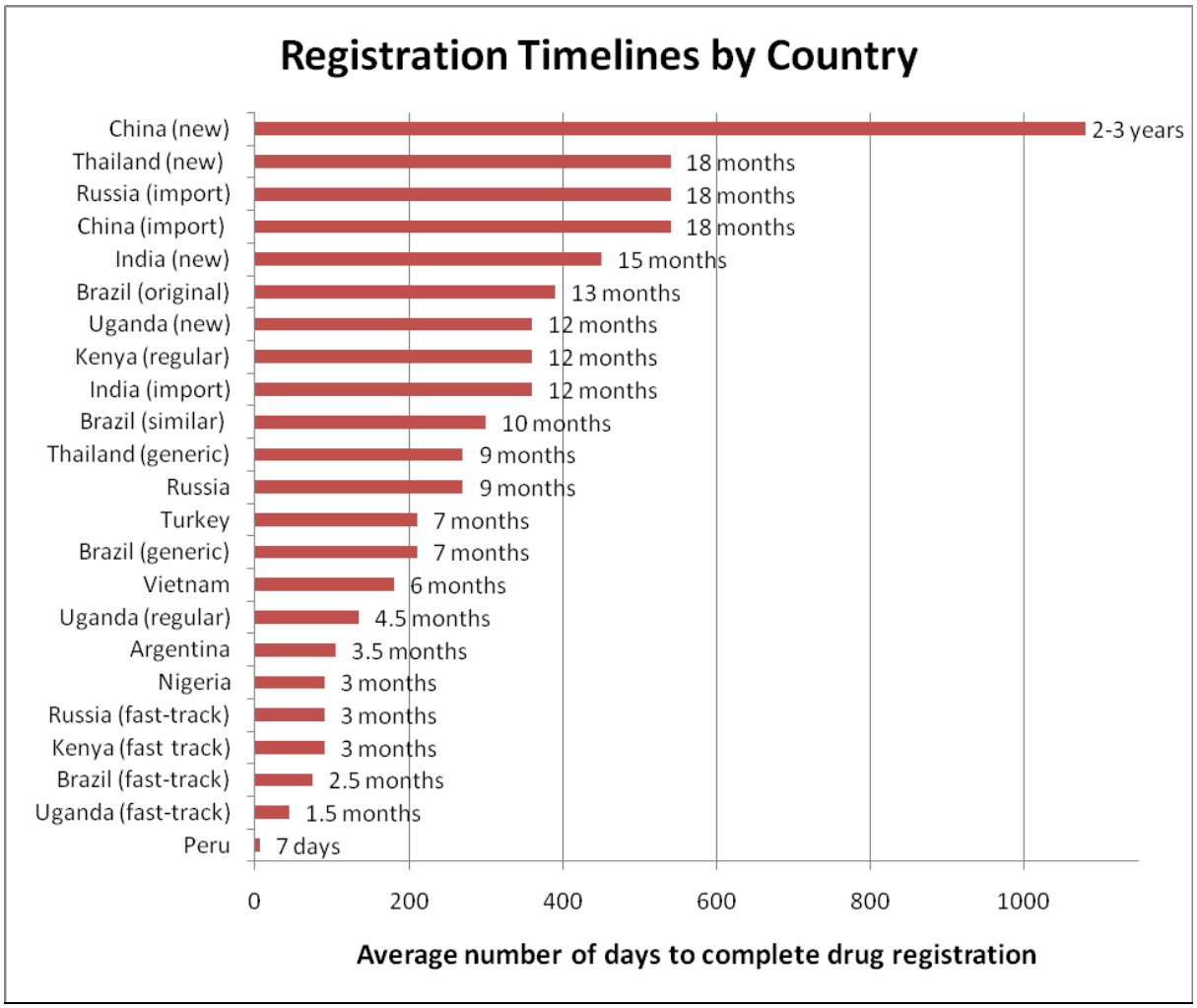

Figure 4: Registration Timeline by Country

Source: Bate et al. (2010)

Other approaches used to reduce the challenge of delay in medicines registration was establishment of Article 58 by the European Union (EU) that provides scientific assessment or opinion on products used outside the EU, but incorporates WHO in the review process. This process takes long time due to stringent review standards, efficiency (average review time is 2.5 months), and structured input from WHO disease experts from disease-endemic countries, and the launch of the US President's Emergency Plan for AIDS Relief (PEPFAR) which is integrated with WHO prequalification programme (Moran et al. 2007).

World Health Organization, 2001 began drug prequalification program as a “surrogate” regulatory approval mechanism on which international procurement groups such as the Global Fund to Fight AIDS, Tuberculosis and Malaria could rely on while developing country capacity for drug regulation was being strengthened (WHO report, 2012; Moran et al 2007). Under this program medicine evaluations are conducted by mixed teams of developed and developing country experts, with around one-third of reviewers from Africa (Moran et al. 2010).

A study conducted by Kaplan and Laing (2003) in 34 developing countries reported that fees charged by drug regulatory authority (DRA) may be used as a policy instrument to speed up regulatory approval, to encourage retention of quality staff and to stimulate introduction of generics versus new chemical entities. However, the study revealed that there is little relationship between DRA registration fees and drug approval time in developing countries.

Different renewal policies exist between countries. In Tanzania registration certificates are valid for a period of five years (TFDA Customer Service Charter, 2012) while other country such as India, renewal is after every three years. In other countries such as Russia once re-registration is granted then an open-ended certificate is granted (Bate et al. 2010). Therefore, Tanzania should rely on its own registration procedure in order to maintain its mission of safeguarding her public health.

CHAPTER THREE

3.0 METHODS AND MATERIALS

3.1 Study Design:

A descriptive cross sectional study design was used to collect data. Structured questionnaires, medicines status form and in depth guided interviews were used for data collection from importing pharmacies, medicines evaluators, Director of Medicines and Cosmetics and Manager of Medicines Registration.

3.2 Study Sites:

The study was conducted in Dar es Salaam region in its three municipalities; Temeke, Ilala and Kinondoni. Specifically the study was conducted at TFDA head office as a regulatory body mandated to perform all activities regarding medicines registration in Tanzania mainland and pharmacies which are dealing with medicines registration in the country. Dar es Salaam was conveniently chosen because most of medicine evaluators (from within and outside TFDA) and majority of pharmacies (about 90%) dealing with medicines registration are located in Dar es Salaam.

3.3 Study participants:

The study involved medicine evaluators from within and outside the TFDA and other study participants (particularly representatives of manufacturer and pharmacists' in-charge) as obtained from TFDA database of local agents. Other study participants were Director of Medicines and Manager of Medicine Registration. Study participants were interviewed through questionnaires in order to get the information required to achieve study objectives.

3.4 Study Period:

The study took five months for its completion. The study period includes proposal development in March 2013, data collection in April to May 2013 and final report submission in July 2013.

3.5 Sampling technique

A convenient sampling technique was used to get the sample size due to the small number of evaluators and pharmacies involved in medicines registration in the country. Study participants who were willing and available during the survey at the study sites were included. Retrospective data of all applications received in the past two years was collected (2010 and 2011). The rationale for selecting the period of 2010-2011 is based on the fact that the current registration guidelines were reviewed in 2008. Factors that hinder smooth registration process were evaluated based on the number of dossiers registered, queried or rejected.

3.6 Sample Size

The study included 42 evaluators from within and outside TFDA who were available during the survey period. This is equivalent to 97.67% of all the evaluators as the total number being 43. They included pharmacists, medical doctors and veterinary medical doctors who are involved in assessment of medicine dossiers. Furthermore, 82 (89.13%) participants (representative of manufacturers and pharmacists' in-charge) were also included in this study from pharmacies.

3.7 Instrument Pre-test

Pre-testing of the data collection tools for their validity and appropriateness was conducted in the pharmacies in Arusha region. The region was selected for pretesting due to the fact that it has similar characteristics to Dar es Salaam in terms of the business of pharmacy dealing with medicines registration. Thereafter, pre-tested tools were revised and restructured for data collection.

3.8 Data Collection

3.8.1 Data collection procedure

The data collection were done by the principle researcher to a target group that included medicines evaluators using a questionnaire (Appendix II) and for the case of pharmacies, pharmacist in-charge and representative of manufacturers were interviewed as key informants using a questionnaire (Appendix III). Questionnaires were distributed and the informants were required to set the date for collection. During collection questionnaires

were checked for completion and in case of misunderstanding of some issues clarifications were provided.

Survey questions focused on the demographic data, training, work experience, knowledge on medicines registration, views (challenges) and experiences in dealing with regulatory requirements. The survey also included open-ended questions to allow respondents to express their views freely and in an unstructured manner.

3.8.2 Data collection Tools

3.8.2.1 In-depth (Guided) interview

During the in-depth interview with managers of medicines registration an interview schedule was conducted (Annex I), tape recorder and notes taking were used for data collection. After interview the information obtained was transcribed and translated immediately to obtain meaningful information. Questions were mainly intended to probe factors that influence medicines registration process based on their experience and knowledge of medicine registration.

3.8.2.2 Structured Questionnaire for Evaluators

A structured questionnaire was used to interview evaluators from within and outside TFDA. The questionnaire was used to determine the knowledge and challenges encountered in medicines registration in which two specific questions (15 and 16) in appendix II were directed to the TFDA workers. The two questions targeted to gather information about management support and payment as they are key personnel in the dossier evaluation.

3.8.2.3 Assessment of knowledge among evaluators and pharmacists' in-charge

A structured questionnaire (Annex III) comprised of eight technical questions apart from other questions that were used for assessing demographic information. The technical questions were targeted to pharmacists' in-charge to assess their knowledge with regards to medicines registration process. These questions were based on importance of medicines evaluation, information required to be submitted for dossier to be evaluated and information to be included in dossier for generic medicines. These questions are contained in question 11-15 of Annex III.

Evaluators involved in medicines assessment were assessed for their knowledge level through structured questionnaire II. The questionnaire apart from assessing demographic information, practice, challenges encountered in medicines registration, it contained eight (8) questions for assessing knowledge with regard to medicine registration. These are questions 7-11 of Annex II.

In both, evaluators and pharmacist in-charge for each question a zero (0) point was awarded for an incorrect answer and one (1) point for the correct answer. Therefore, the knowledge scale was graded as low (0-2), medium (3-5) and high (6-8).

3.8.2.4 Medicines status form

A retrospective record review form Annex IV was used to capture data for the past two years on the application submitted to assess the status of applications received. The record review focused on the collection of the information on the outcome of application with the intention of determining the number of applications received, evaluated, rejected and queried. The assessment provided information on the quality of the dossier submitted hence determined challenges faced by the Authority during medicines registration. The period was purposely considered in order to reduce confounding factors among different years.

3.9 Data Management and Analysis

Collected data were counter-checked for their clarity and validity. The coded data were analyzed using Statistical Package for Social Sciences (Version 17) computer analysis software.

Measure of the central tendency and dispersion was analyzed and reported by using descriptive statistics. The frequency distribution was used to show distribution of both the outcome and explanatory variables. Fischer exact test was used to test for associations between the outcome variables (knowledge) and the explanatory variables including gender, professional status, work experience and in- service training. A P-value of less than 0.05 was considered as statistically significant, at 95% confidence interval.

Study variables that were considered in this study are:

Independent variables;

- Demographic data of the study participants

Dependent variables

- Knowledge of evaluators regarding dossier evaluation
- Average time taken for application to be evaluated
- Average number of dossier application received and assessed annually
- Registrant compliance to the guideline requirement
- Knowledge of pharmacist in-charge on dossier preparation with regards to registration guidelines
- Challenges facing medicines registration process

3.10 Ethical Consideration

According to Declaration of Helsinki, principles related to conducting researches on human subjects were followed to ensure that ethical standards that promote respect for all human subjects and protect their life, health, dignity, integrity, right to self-determination, privacy, and confidentiality were adhered to. The Study participants, who were Director of Medicines and Cosmetics, Manager of Medicines Registration, evaluators, managing directors of pharmacies and pharmacist in-charge of selected pharmacies were informed on the purposes of the study, and were asked on their willingness to participate in the study. Written consent form (Annex V) was obtained from study participants. Names of study participants were not used instead code numbers were used for data entry and analysis from individually filled in questionnaires. Ethical clearance was obtained from the MUHAS Research and Publication Committee. Permission to conduct study in the selected study sites was granted by pharmacy owners and TFDA Director General.

CHAPTER FOUR

4.0 RESULTS

4.1 Socio-demographic information of participants

Out of 43 targeted study population for the case of medicines evaluators, 42 of them filled the questionnaires which made response rate of 97.67%. Among 46 targeted pharmacies, only 41 could be enrolled in the study which made a response rate of 89.13%. During data collection different tools were used for the purpose of collecting data at different levels of study population. Respondents included medicines evaluators, representatives of manufacturers and pharmacists' in-charge of the premises. The results for socio-demographic characteristics of medicines evaluators are summarized in Table 1 below.

Table 1: Socio-demographic characteristics of medicines evaluators (n=42)

Characteristics	Number	Percentage
Gender		
Male	27	64.3
Female	15	35.7
Professional status		
Pharmacist	33	78.6
Medical Doctor	4	9.5
Veterinary Doctor	5	11.9
Experience in medicines evaluation		
0 – 1 years	9	21.4
2 – 5 years	15	35.7
6 – 10 years	13	31.0
Above 10 years	5	11.9
Main daily activity		
Medicines Registration Officer	11	26.2
Medicines Inspector	11	26.2
Clinical Trial Officer	3	7.1
Medical Device Officer	4	9.5
Medicines Analyst	4	9.5
ADDO coordinator	2	4.8
Dispensing pharmacist	2	4.8
Others*	5	11.9
Attended training in medicines evaluation		
Yes	37	88.1
No	5	11.9

*includes lecturers, researchers and self employed evaluators

Out of 42 respondents, 27(64.3%) were males while 15(35.7%) were females with majority (78.6%) of respondents being pharmacists, medical doctors (11.9%) and veterinary doctors (9.5%).

Only 9(21.4%) evaluators had experience of ≤ 1 year and 5(11.9%) had worked for more than 10 years while majority (66.7%) had experience of between 2 to 10 years. Among the 42 respondents, only 11 of them could be categorised as medicine evaluators based on their main daily activity at TFDA and job description. Thirty seven (88.1%) respondents had attended training on dossier evaluation either in-house and/or abroad.

Table 2: Socio-demographic characteristics of pharmacists' in-charge of pharmacies (n=41)

Characteristics	Number	Percentage
Gender		
Male	32	78.0
Female	9	22.0
Work experience		
0 – 1 year	2	4.9
2 – 5 years	13	31.7
6 – 10 years	14	34.1
Above 10 years	12	29.3
Attended training on dossier preparation		
Yes	4	9.8
No	37	90.2

From table 2 above, among the 41 pharmacists' in-charge who were interviewed, 32 were males and 9 were females. Only 2(4.9%) of them had work experience of ≤ 1 year as pharmacists' in-charge. Twelve pharmacists' in-charge had more than 10 years working experience with majority (39) of them having experience of between 2 to 10 years. Only 4 pharmacists' in-charge had received training on dossier preparation, indicating that

majority (90.2%) of the pharmacists' in-charge had not undergone any training with regards to dossier preparation or compilation.

Table 3: Socio-demographic characteristics of representatives of manufacturers of pharmacies (n=41)

Characteristics	Number	Percentage
Gender		
Male	38	92.7
Female	3	7.3
Professional status		
Pharmacist	11	26.8
Businessman	25	61.0
Marketing Manager	3	7.3
IT specialist	1	2.4
Economist	1	2.4
Experience in business		
0 – 1 years	0	0.0
2 – 5 years	11	26.8
6 – 10 years	7	17.1
Above 10 years	23	56.1

Among 41 representatives of manufacturers, there were 11 pharmacists, 25 businessmen, 3 marketing managers, one IT specialist and one economist. Among them, 5 were performing dual duties i.e directors as well as pharmacists' in-charge. More than half (56.1%) of them had experience in running pharmaceutical business for more than 10 years.

4.2 Companies represented, their location and number of dossiers registered

Majority of pharmacies (90.20%) are representing ≤ 10 companies. Among the pharmacies, 34 (82.9%) of them were representatives of Asian pharmaceutical companies

with majority (78%) of them being Indian companies. Twenty three (56.1%) pharmacies were representing European companies while 19 (46.3%) pharmacies were representing companies from Africa. Other companies were from Latin America (1), USA (2), Far East (2) and Australia (1).

Out of 41 local companies, 22 (53.7%) had more than 20 products registered, 10 (24.4%) had registered 11-20 products while 9 (22.0%) had registered ≤ 10 products since registration came into effect. These information are summarized in table 4 below as:

Table 4: Local companies distribution in relation to companies represented, their locations and dossiers applications registered (n=41)

Item	Number	Percentage
Companies represented		
0-10	37	90.2
Above 10	4	9.8
Location of suppliers		
Africa	19	46.3
Asia	34	82.9
Europe	23	56.1
Application of dossier registered		
0-10	9	22.0
11-20	10	24.4
Above 20	22	53.7

4.3 Time taken for dossier registration

Only 5 (12.2%) representatives of manufacturers agreed with time taken of twelve (12) months stipulated in the TFDA Client Service Charter for dossier registration to be followed. Among the respondents, 23 (56.1%) disagreed and 9 (19.5%) strongly disagree with time taken for dossier registration. This indicates that the time taken for dossier

registration is longer than that stipulated in the Client Service Charter; which was 12 months.

4.4 Assessment of knowledge with regards to medicines registration

4.4.1 Knowledge levels of evaluators with regard to medicines registration process

Table 5: Proportion of evaluators' knowledge assessment in relationship to the correct responses (n = 42)

Item	Number	Percentage
Know core activity of TFDA	42	100.0
Correctly described core activity	37	88.1
Know medicine registration process	41	97.6
Correctly explained registration process	31	73.8
Know information to be submitted	39	92.9
Correctly explained information to be submitted	20	47.6
Know importance of SOP for evaluation	40	95.2
Able to mention when was last SOP evaluation reviewed	10	23.8
Important information for dossier of generic medicines		
Dully filled application form	37	88.1
Data for Active Pharmaceutical Ingredient	34	81.0
Data for finished pharmaceutical ingredient	37	88.1
Data for safety and efficacy	32	76.2

Out of 42 respondents, majority (88.1%) of them could correctly explain the core activity of TFDA as "to regulate products such as drugs, food, cosmetics, and medical devices in order to protect and promote public health". Among 41 respondents who knew the meaning of medicine registration, nearly three quarter (73.8%) were able to properly define medicines registration as "that process of assessing quality, safety and efficacy of medicinal product and granting marketing authorization".

Among 39 respondents who knew the information that are required to be submitted in order for the dossier to be evaluated, only 20 (47.6%) were able to mention such

information. Among 40 respondents who knew the importance of using standard operating procedure (SOP) for evaluation of medicinal product dossier, only 10 (23.8%) were able to mention the year when that SOP was last reviewed.

Out of 42 respondents, majority of them knew the information required to be included in dossiers for generic medicine. Thirty seven (88.1%) respondents mentioned application form, 34 (81.0%) mentioned information on active pharmaceutical ingredients (API), 37(88.0%) mentioned information on finished pharmaceutical product (FPP) and 32(76.2%) mentioned data on safety and efficacy (76.2%) as the required information for inclusion in the dossier for generic medicines.

The overall knowledge of evaluators with regard to medicines registration process was found to be high. Out of 42 respondents, 27 (64.29%) were able to respond correctly in 6 up to 8 questions assessing the knowledge level. Two respondents had low knowledge on medicines registration process as they only answered correctly between 0 to 2 questions which were designed to assess knowledge on medicines registration process.

The study also revealed that 31 (83.8%) evaluators who had attended in-service training on evaluation were more knowledgeable on medicines evaluation than those 5 (100.0%) who had not attended training. Results show that there is significant association between training and knowledge of medicines evaluation (P = 0.001). Table 6 shows that there was no association between knowledge level and gender (p=0.481) and professional (0.077). Further results indicated that there is no association between knowledge and work experience (p=0.636) however, evaluators who had work experience of above 10 years (100%) were more knowledgeable that those who worked between 0 to 1 year.

Table 6: Knowledge of evaluators on medicines registration by gender, work experience, profession training and attendance of training on dossier evaluation (n=42)

		Knowledge on medicines registration		Total	P-value
		Yes	No		
Gender	Male	21 (77.8%)	6(22.2%)	27	0.481
	Female	10 (66.7%)	5(33.3%)	15	
Professional	Pharmacist	26 (78.8%)	7 (21.2%)	33	0.077
	Medical Doctor	1 (25.0%)	3 (75.0%)	4	
	Veterinary Doctor	4 (80.0%)	1 (20.0%)	5	
Work Experience	0 - 1 year	6 (67.3%)	3 (33.3%)	9	0.636
	2 - 5 years	11 (73.3%)	4 (26.7%)	15	
	6 - 10 years	9 (69.2%)	4 (30.8%)	13	
	> 10 years	5 (100.0%)	0 (0.0%)	5	
Attended in-service trainings for dossier evaluation	Yes	31 (83.8%)	6 (16.2%)	37	0.001
	No	0 (0.0%)	5 (100.0%)	5	

4.4.2 Knowledge levels of pharmacists in-charge with regard to medicines registration procedure

Table 7: Proportion of pharmacists in-charge knowledge assessment in relationship to the correct responses (n = 41)

Item	Number	Percentage
Know importance of medicines evaluation	27	65.9
Correctly mentioned importance of medicines evaluation	13	31.7
Know information to be submitted before dossier evaluation	22	53.7
Correctly mentioned information to be submitted	13	31.7
Know medicines registration process	26	63.4
Correctly described registration process	16	39.0
Know information required for generic dossiers	19	46.3
Mention four categories of information on dossier for generic medicines		
Dully filled application form	13	31.7
Data for Active Pharmaceutical Ingredient	14	34.1
Data for finished pharmaceutical product	12	29.3
Data for safety and efficacy	14	34.1

Among 27 pharmacists' in-charge who indicated to know the importance of medicines evaluation, only 13 (31.7%) could explain correctly the importance of medicines evaluation "that is to ensure quality, safety and efficacy of medicines in the country". Out of 22 pharmacists who knew the information to be submitted before a dossier can be evaluated, only 13 (31.7%) mentioned correctly the information that are required to be submitted. Twenty six pharmacists' in-charge mentioned that they knew the process of medicines registration; only 16 of them could explain correctly the process involved "that is assessment of quality, safety and efficacy of medicinal product dossier and analysis of sample eventually granting of market authorization".

Out of 41 pharmacists' in-charge, only 19 (46.3%) of them knew the information required for preparation of a dossier for generic medicines. Only 14 respondents mentioned the

active pharmaceutical ingredients (API), 12 mentioned finished pharmaceutical products (FPP), 13 mentioned dully filled application form and 14 mentioned data for safety and efficacy as the requirements for preparation of a dossier for generic medicines.

The overall knowledge of pharmacists' in-charge with regard to medicines registration process was found to be low. Out of 41 respondents, only 12 (28.57%) were able to respond correctly in 6 up to 8 questions assessing the knowledge level. Among them, more than half (61.0%) had low knowledge on medicines registration process.

Table 8 shows that there were no association between knowledge level and gender. However, an association was observed between knowledge and work experience ($p=0.046$), professional training ($p=0.000$) as well as other trainings particularly in-service training with regards to medicines evaluation ($p=0.007$).

Table 8: Knowledge of pharmacists in-charge on medicines registration by gender, work experience, professional training and attendance of training on dossier review (n=41)

		Knowledge on medicines registration		Total	P-value
		Yes	No		
Gender	Male	11 (34.4%)	21(65.6%)	32	0.692
	Female	2 (22.2%)	7(77.8%)	9	
Work Experience	0 - 1 year	2 (100.0%)	0 (0.0%)	2	0.046
	2 - 5 years	2 (15.4%)	11 (84.6%)	13	
	6 - 10 years	3 (21.4%)	11 (78.6%)	14	
	> 10 years	6 (50.0%)	6 (50.0%)	12	
Component of dossier preparation and review in the Curriculum for Bachelor of Pharmacy training	Yes	10 (90.9%)	1 (9.1%)	11	0.000
	No	3 (10.0%)	27(90.0%)	30	
Attended in-service trainings for dossier preparation	Yes	4(100.0%)	0(0.0%)	4	0.007
	No	9 (24.3%)	28(75.7%)	37	

4.5 Practice among evaluators on medicines registration

Practice among evaluators during medicines registration are summarized in Table 9 below.

Table 9: Summary of responses to practice on medicines registration among evaluators (n=42)

Questions		Number of Respondents	Percentage
Follow SOP for evaluation	Yes	38	90.4
	No	2	4.8
	Not sure	2	4.8
Number of dossiers evaluated since were employed	1-50	26	61.9
	51-100	5	11.9
	101-150	4	9.5
	151-200	2	4.8
	Above 200	5	11.9
Evaluation time per dossier	Less than one day	1	2.4
	2 days	11	26.2
	3 days	18	42.9
	More than 3 days	12	28.6
Mean evaluation time (days) 2.98 ± 0.811			
Dossiers that are insufficiently submitted	Rarely	4	9.5
	Moderately	15	35.7
	Very often	23	54.8
Guideline reviewed in 2012	Yes	22	52.4
	No	20	47.6
TFDA Guidelines comply to WHO standards and other Regional harmonisation initiatives	Yes	20	47.6
	No	22	52.4

4.6 Job satisfaction

Through this study various aspects which contribute to the achievement of personal fulfilment at work place were investigated. Two questions were directed to TFDA evaluators to explore their job satisfaction. Such aspects included support from the TFDA management and evaluation payment. Nine respondents indicated that they had a strong support from the management on the dossier evaluation, while 18 respondents indicated to be receiving a moderate support. Taken together, the results show that three quarters (72.93%) of respondents are supported by the TFDA for dossier evaluation while 27.1% indicated not to be supported.

Out of 37 respondents, only 7(18.9%) were not sure on their satisfaction level with regards to evaluation payment. Furthermore, the findings show that the number of respondents who were dissatisfied and those who were satisfied were equal (40.5%) each. These findings provide information showing the influence of management support to satisfaction on dossier evaluation payment. It is shown that, majority of respondents strongly agree on management support (88.9%) to satisfaction on evaluation payment than those who are dissatisfied. The results further show an association between management support and payment satisfaction for dossier evaluation among the respondents ($P = 0.002$).

The survey revealed that out of 32 pharmacists' in-charge who were aware of the importance of post marketing surveillance, more than half (61%) were able to describe its importance " that is to ensure product quality through testing to be consistent with the sample submitted during premarketing approval".

4.7 Assessment of challenges in medicines registration process

Challenges that hinder smooth medicines registration process were investigated in two ways; first to the evaluators who are dealing with assessment of medicines dossier and on the other part to the representatives of manufacturers as required by the law (to assume all legal responsibility with a proof upon submission of a power of attorney).

4.7.1 Challenges of medicines registration encountered by evaluators

The majority 36 (85.7%) of evaluators mentioned inadequate number of evaluators as one of the factors hindering timely assessment of medicines dossier. The other findings show that 30 (71.4%) of evaluators mentioned insufficient evaluation payment as a challenge encountered in medicines registration. Lack of regular and expertise training 32 (76.2%) was also mentioned as the factor that affects medicines registration. Unreliable management information system (MIS) 24(57.1%) and 26(61.9%) insufficient evaluation time were also reported. Thirty one (73.8%) evaluators indicated poor dossier arrangement; quality and authenticity of information as the causes of delay in registration process. Lack of updated reference materials during evaluation was also mentioned as one of the challenges in medicines registration process. The challenges faced by evaluators during medicines registration are summarized in figure 4.1 below.

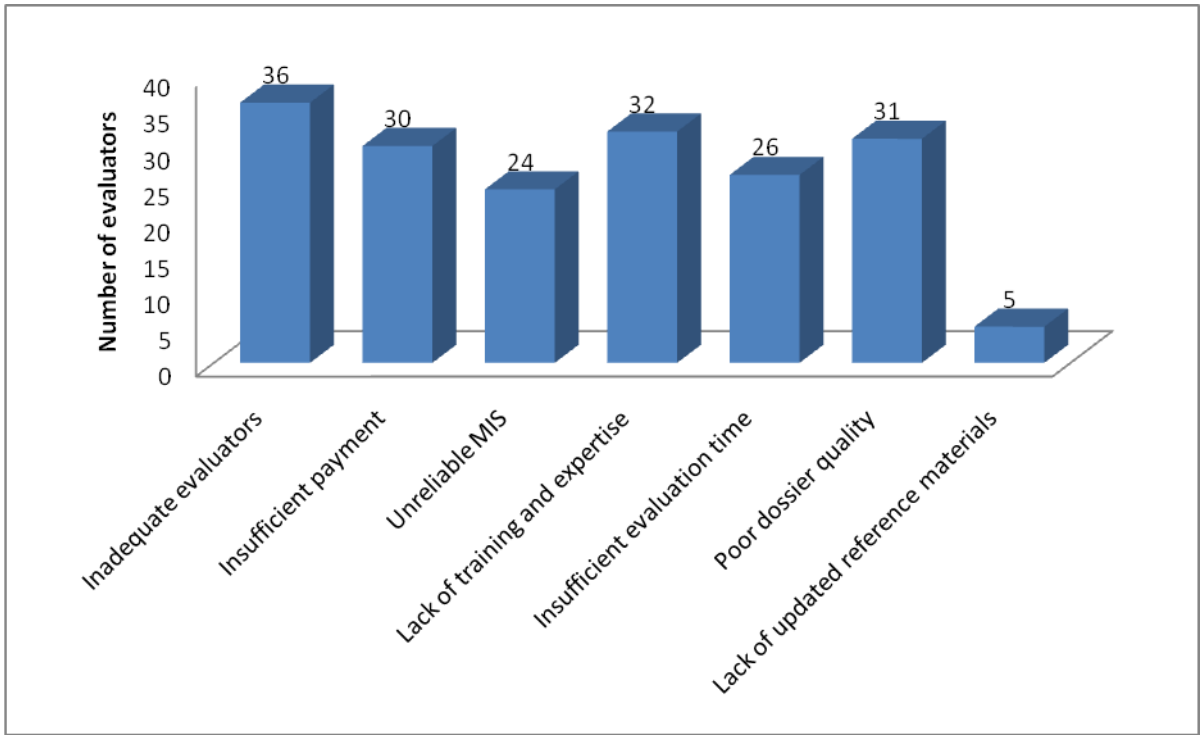

Fig. 5 Challenges encountered by evaluators (n=42)

4.7.2 Challenges of medicines registration encountered by representatives of manufacturer

Majority of representatives of manufacturers reported that registration process takes long time 38(92.7%), there is inadequate number of medicines evaluators 31(75.6%), communication gap between regulatory authority and registrants 26(63.4%), raised queries after evaluation of dossier takes long time to be sent to clients 27(65.9%) and the inefficient registration database 29(70.7%).

Other challenges reported were higher GMP inspection fees, delay of GMP inspection, poor record keeping and difficulty in follow-up due to frequent change of staff in the Directorate of Medicines and Cosmetics at TFDA. Figure 4.2 below shows summary of challenges encountered by representatives of manufacturer.

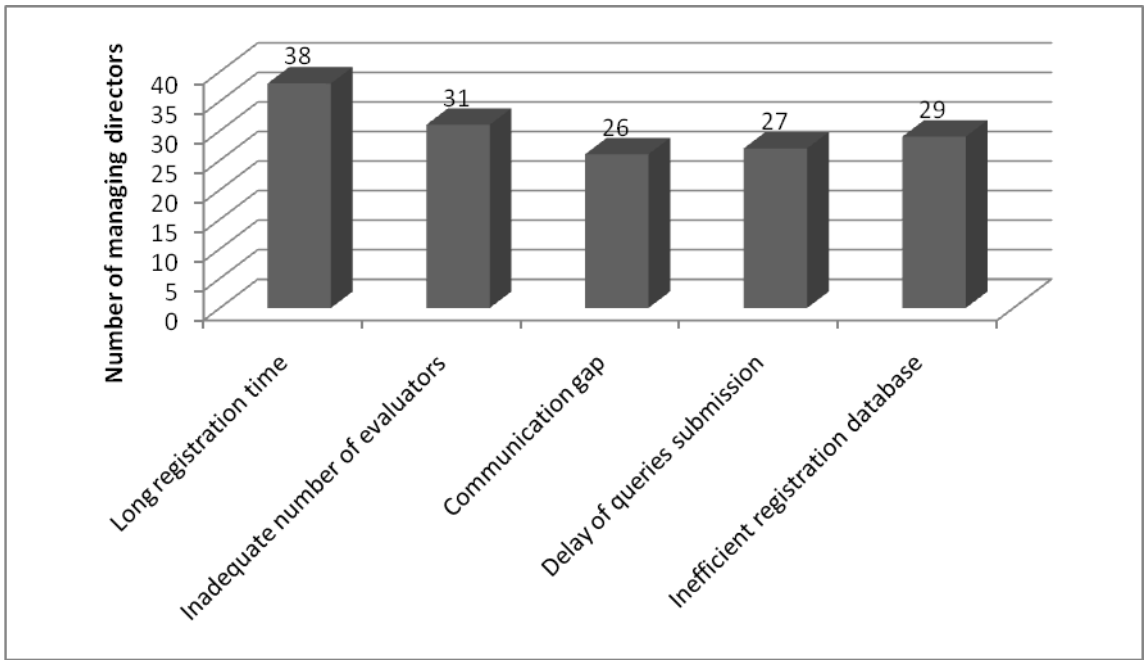

Figure 6: Challenges encountered by representatives of manufacturers regarding medicines registration process (n=41)

4.8 Assessment of quality of dossiers undergoing evaluation with respect to the registration guidelines

A retrospective review of applications received for three consecutive years were targeted. However, only data for two years were obtained (2010 and 2011) due to the fact that the database system was transformed from Regsoft to TFDA MIS version 1.0.12 hence causing mix up of information during data migration. In total, 743 dossiers application were retrieved and assessed. In 2010, out of 400 applications received, 249 (62.3%) applications were evaluated and the remaining 151 (37.7) were not evaluated. Among the evaluated applications, only 93 (37.35%) were registered, 2 (0.80%) queried, 153 (61.45%) rejected and one (0.40%) application had its status not determined. In 2011, out of 343 applications received, 229 were evaluated and the remaining 114 were not evaluated. Among the evaluated applications, only 77 (33.62) were registered, 60 (26.20%) queried, 67(29.26%) rejected and 25 (10.92%) had their status not determined.

Taken together, out of the 743 applications which were received for the period of two years, 170 (22.88%) applications were registered, 220(%) were rejected, 62(%) queried and 26(%) had their status not determined. Out of 478 dossiers which were evaluated, more than half (58.60%) of them were either rejected or queried. This is an indication that the quality of submitted dossiers is not adequate as was also highlighted as one of the challenges facing evaluators in medicines registration.

As per the Client Service Charter it is specified that for a normal type of dossier, the evaluation is supposed to take a minimum of twelve (12) months. In this study, 265 applications had no status remarks indicating that they were not yet evaluated. For the applications submitted in 2010, 152 dossiers had no status remarks by April 2013 indicating that such dossiers would take more than three years to be evaluated.

Table 10: Proportion of human medicine applications received in 2010 and 2011 and their status as on April 2013.

Year	New dossier applications received	New dossier applications evaluated	New dossier applications not evaluated	Final remarks after evaluation			
				Registered	Queried	Rejected	Status not indicated
2010	400	249 (62.3%)	151(37.8%)	93	2	153	1
2011	343	229 (66.8%)	114(33.2%)	77	60	67	25
Total	743	478	265	170	62	220	26

4.9 In-depth interview of key informants from TFDA

Two key informants from the medicines regulatory authority (TFDA) were interviewed. The informants were pharmacists working in the Directorate of Medicines and Cosmetics and had work experience for more than ten years in the registration department.

An overview of medicines registration history was provided by one respondent, who said;

> *Medicines registration started back in 1998 with 1 year provisional registration which was known as notification under the Pharmacy Board and the first application was received in 1997. In April, 1999 the first product was registered.*

The respondent continued explaining the current medicines registration situation as;

> *The registration process involves assessment of quality, safety and efficacy as provided in the drug dossier and then provision of marketing authorization after compliance with Good Manufacturing Practice (GMP) and registration samples. Nowadays, the registration process is very advanced and can be comparable to South Africa, Zimbabwe, Ghana and Nigeria.*

Regarding the views of the key informants on challenges encountered in medicines registration process in Tanzania both the informants agreed that medicines registration process is facing challenges. The challenges were identified into five themes as provided by the interviewee:-

(i) Long registration time/meeting timelines

The respondents indicated that the registration process takes long time as observed by stakeholders. The first respondent said;

> *The problem is not unique in Tanzania; however there is inadequate number of evaluators in Tanzania. Further, he explained that currently there are nine evaluators in the country. (MMCR), Pharmacist)*

This was supported by the other respondent who said;

> *The long registration time was due to the shortage of human resource to perform assessment of medicines (DMC, Pharmacist)*

(ii) Communication gap between TFDA and customers

It was reported by both respondents that there is problem of delay in sending comments response to the customers.

One of the respondents pointed out that;

> *The situation was due to the old system that uses letters for communication. This creates delay to initiate communication with the manufacturer or their representatives. Further he said that the problem is also due to the fact that most manufacturers have more than one representative who collects mails or even registration certificate without informing the local agent. This creates problem in cases where documents are either misplaced or not delivered on time to the intended target. (MMCR, Pharmacist)*

Another respondent argued that;

> *The gap sometimes is due to either internal arrangement in which a separate directorate is responsible for sending mails via postal office or might be due to postal office procedure/ their own arrangement of transporting mails. However, he recommended that there is a need to assess and improve the communication process (DMC, Pharmacist)*

(iii) Unreliability of Management Information System (MIS)

This was supported by both respondents and they pointed out the following:

The first respondent said that;

> *The unreliability of MIS was due to the roll out process of the current system which took place at the same time in all departments instead of implementation in one department to identify its strength or weakness, lack of resources, inefficient data base for data management. (MMCR, Pharmacist)*

This was supported by the other respondent who said that;

> *Even WHO faced same problems and tried a number of systems, but now they have managed to come up with a stable MIS (DMC, Pharmacist)*

(iv) Lack of expertise in some areas

With regard to lack or inadequate expertise in some areas, one respondent pointed out that;

> *The problem is due to inadequate number of human resource; therefore the registration department cannot allocate a person to only one area of specialization. Further, he said deployment of evaluators is beyond TFDA ability and also it was observed that most of temporary staff have low knowledge in dossier evaluation, hence end –up with poor quality of evaluation that creates huge burden to the second assessor. Also he insisted that expertise is built over time through hardworking. He reported that even though he has been performing evaluation for more than ten years, he is still learning. (MMCR, Pharmacist)*

(v) Lack of updated medicines register

Regarding the issue of not updating registered medicines in the website regularly, the second respondent pointed out that;

> *The current MIS has shown performance failure hence causes data mix-up and sometimes mix-up is due to human error. However, the newly appointed head of department has started to update the medicines register (DMC, Pharmacist)*

(iv) Opinions to improve medicines registration process

One respondent said that, the department has designed a new strategy of conducting frequent retreats in which a goal has been set to finalize evaluation of all applications received in 2012 within the first half of 2013. He continued by saying nowadays communication gap has been reduced by the use of email.

The second respondent said, they will recruit more evaluators and use external evaluators to reduce the application backlog.

CHAPTER FIVE

DISCUSSION

Although medicines registration started back in 1998, this is the first study conducted in Tanzania to assess challenges of medicines registration process in the country. The study also had intention of assessing the knowledge of evaluators and pharmacist in-charge who are involved in medicines registration. Many issues regarding registration of medicines have been revealed through this study. The study involved 42 medicines evaluators working within and outside TFDA which was equivalent to 97.67% of the target group, 82 representatives of manufacturers to the companies specifically from abroad which was equivalent to 89.13% of the target group. In addition, a total of 743 applications which were received in 2010 and 2011 were reviewed to determine the time taken for evaluation of a dossier, number of dossiers registered or rejected as per April 2013.

Effective medicines registration requires the medicines regulatory authority to have adequate number of qualified staff to perform medicines evaluation and registration. The staff, specifically evaluators, should be knowledgeable enough to provide the required technical assistance. WHO (2010) reported that authorization of medicines for sale in a country should be based on a scientific assessment of their safety, efficacy and quality and this is considered the core function of the regulatory authority. The study findings revealed that most of the evaluators (88.1%) had received training on dossier evaluation. However, out of 42 evaluators only 11 were categorised as medicines registration officers, and this is an indication that majority of staff involved in medicines evaluation do not have the required expertise for evaluation of medicines.

The findings of this study also revealed that majority (61%) of the pharmacist in-charge had low knowledge on medicines registration concept. This observation has also been reported in a study which was conducted in Uganda by Moran et al (2010). In the later study it was revealed that pharmacy schools do not provide specific training in regulatory affairs, thus limiting the usefulness of graduates to medicines regulatory authorities (MRAs). These findings are also supported by the results of the situation analysis

conducted in Mozambique by WHO (2007). In that study, it was reported that there was lack of staff in terms of quantity and quality for the whole pharmaceutical sector.

TFDA Client Service Charter has defined registration process to take a minimum of 12 months. However, it has been observed that the registration process goes beyond the stipulated timeframe. The finding from this study show that majority (75.6%) of representatives of manufacturers indicated that the time taken for registration of their applications is much longer than 12 months. This is also supported by the retrospective data analysis of the applications received in 2010, in which out of 400 applications, 152 applications had their status not yet determined as by April 2013. In other word, products of these applications would take more than three years to be registered in Tanzania. These findings are similar to those reported by Narsai et al (2010) among local and multinational companies based in South Africa, indicating that registration timelines did vary between one and three years.

Similar results were reported by WHO (2010) showing that out of 26 Sub-Saharan countries, 24 (92%) of them were observed to have shortage of adequately qualified assessors for timely dossier evaluation. This observation indicated that most of the authorities in the region had limited human resources and scientific expertise. Lack of adequately qualified assessors was also mentioned by informants from TFDA as among challenges encountered in the medicines registration process in Tanzania.

Efficiency and productivity of human resources depends upon many factors, and job satisfaction is one of the most important factor. Human resource in any institution is the most valuable asset and it works as an engine to provide a sustainable service delivery (Kumar et al, 2013). Private health sectors are relatively well organized while public sector faces a number of challenges which affect the level of job satisfaction among its staff (Hafeez et al, 2010). In this study assessment of job satisfaction among TFDA evaluators with regard to management support revealed that nearly three quarter (72.9%) of evaluators agreed to be supported by the management, an indication that these employees are somewhat satisfied. Furthermore, the study shows that the number of respondents who were satisfied with dossier payment was 40.5%. These findings are similar to those

reported by Kumar et al (2013) in Pakistan with overall satisfaction rate of 41% among health professionals in the public sector. These findings are also supported by the results of a study conducted in Tanzania by Leshabari et al (2008) that revealed poor job satisfaction among staff in the health system.

WHO (2008) and Ratanawijitrasin (2002) recommended that, effective regulation and enforcement of medicines should be based on a scientific assessment of their safety, efficacy and quality. Therefore, drug regulatory authorities should have adequate qualified staff who are motivated and experienced. However, findings from this study pointed out that inadequate number of evaluators was among the challenges reported.

The results of this study show that insufficient payment of evaluators is among the challenges encountered in medicines registration. This finding is supported by a study conducted by Ratanawijitrasin and Wondemagegnehu (2002) in 10 WHO member states which reported that the capacity of the regulatory authorities to perform their functions properly can be influenced by human resource remuneration. Also this finding is supported by a study conducted by Hill and Johnson (2004) indicating that regulatory efficiency depends on having staff who are motivated by giving incentives.

Another finding from this study revealed that lack of regular and expertise training is among the challenges in medicines registration. These findings are similar to the one reported by Hill and Johnson (2004) among MRAs in developing countries that indicated the need for expertise in evaluation especially in the areas of biological products. Dicko et al (2007) also reported that 87% of African MRAs could not evaluate biological products such as vaccines, indicating the lack of expertise in evaluation of some products especially biological and new chemical entities.

A study conducted by Moran et al (2010) reported that some MRAs have only 1 or 2 personnel to conduct all regulatory functions. Out of less than 50 pharmacists who graduate in Uganda each year, the majority of them take up positions with industry and international organisations, leaving the Ugandan National Drug Authority understaffed. As seen from the present study, this could be due to the fact that pharmacy schools do not provide specific training in regulatory affairs.

Inefficient management information system was mentioned as one of the challenges for effective dossier evaluation and registration. This challenge was reported by representatives of manufacturers, evaluators and key informants from TFDA management. Similar findings were reported by Hill and Johnson et al (2010) indicating that competent MRAs should not only have sufficient scientific capacity to carry medicines registration but also an effective system of tracking application that would employ appropriate use of information technology. TFDA internal arrangement requires one dossier to be evaluated within 3 days. Findings from this study show that insufficient evaluation time is among the challenges encountered by evaluators. Similar findings were reported by Ratanawijitrasin and Wondemagegnehu (2002) in 10 WHO member states indicating that the time taken to assess and register a product should be long enough to ensure medicines are effectively assessed for safety, efficacy and quality.

Another finding of this study revealed lack of updated medicines register. In the recent days TFDA has been using management information system (MIS) which contains all the submitted applications. The system has been shown to be inefficient in which some products which are registered by one manufacturer are found to belong to a different manufacturer. In addition, TFDA website was found not to be updated to include currently registered products in the database. These findings are similar to those reported by Zaidi et al. (2013) in Pakistan that revealed absence of medicines register despite existence of an open registration policy since 2003 with more than 75,000 medicines registered.

From the findings of this study it is seen that more than half of the applications submitted in 2010 and 2011 were either rejected or queried. This is an indication that most manufacturers do not compile their dossier with regard to the countries specification. These findings might suggest that the personnel involved have limited knowledge on dossier preparation and/or the quality of the products submitted for registration do not meet the requirements. These findings are similar to those reported by WHO pre-qualification programme indicating that there are more quality, safety and efficacy related deficiencies in generic dossiers submitted and this was found to be the main reasons for delay in registration of products or rejection (Worku et al, 2012).

Other studies (Trouiller et al, 2001; Hill and Johnson, 2010) have also recommended that drug regulatory authorities and international organizations need to fill the gap of drug development by ensuring that the dossiers prepared for new products meet quality standards and contains sufficient clinical evidence to demonstrate their effectiveness before registration. A study conducted by Handoo et al. (2012) also reported that, the primary challenge encountered by many countries is the submission of medicines dossiers that do not comply with registration requirement.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 CONCLUSIONS

This study has found that medicines registration process in Tanzania is faced with a number of challenges which are multifaceted from evaluators, TFDA management, manufacturers and their representatives.

The study has revealed that registration of medicines takes longer time than what has been stipulated in the Client Service Charter. The prolonged registration is contributed by human resource. In the case of TFDA, inadequate number of evaluators was observed as the main factor that could be contributed by insufficient payment as well as limited capacity of the Authority to hire adequate number of evaluators. This shortcoming causes delay in evaluation of applications received resulting in prolonged registration time.

Meanwhile limited knowledge observed among the pharmacist in-charge working in the pharmacies dealing with medicines registration contributes to their delay due to submission of poorly prepared medicine dossiers. If this problem is identified earlier it would certainly reduce the number of queries and rejection, thereby shortening registration process

6.2 RECOMMENDATIONS

From this study a number of recommendations are given to improve the registration process of medicinal products in Tanzania. They are classified into educational, managerial and regulatory approaches.

(i)Educational Approach

The MOHSW in collaboration with other stakeholders such as TFDA and Schools of Pharmacy in the country should review pharmacy training curriculum for undergraduate course to include regulatory issues particularly in the area of medicines registration.

TFDA in collaboration with other stakeholders particularly the manufacturers should conduct continuing education for pharmacist-in charge in order to impart them with

updated knowledge and technological advancement in the field of medicines registration for the purpose of expediting registration process.

(ii) Managerial Approach

MOHSW through its agency; TFDA should increase recruitment of medicines evaluators in order to reduce registration time.

TFDA should strengthen collaboration with higher learning institutions in order to improve a pool of medicines evaluators.

(iii) Regulatory Approach

TFDA should design a system to automatically identify products registered and used in countries with stringent regulatory authority in order to assign a minimal evaluation time.

TFDA should assign a specific drug regulatory officer as a focal person to deal with all matters related to medicines registration. This will ensure proper handling, retrieval of documents sent or received by the TFDA and improves communication by timely provision of feedback to clients.

TFDA should invest in a new management information system that is reliable, efficient and that would ensure regular update of information including medicines register.

iv) Areas for further research

As seen from this study, registration of medicines takes longer time leading to complaints from clients. A study can be conducted to identify if the cost of medicines registration in terms of finance and time have any impact on the pricing of the medicines in the country.

This study targeted medicines evaluators, TFDA personnel and representatives of manufacturers. A study can be designed to gather perspectives of local manufacturers and

Association of Pharmaceutical Industry in Tanzania that could provide additional information regarding medicines registration and challenges encountered in the country.

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APPENDICES

ANNEX I

CHALLENGES OF MEDICINE REGISTRATION PROCESS IN TANZANIA

PROBE QUESTIONS: DIRECTOR OF MEDICINES AND MANAGER OF MEDICINES REGISTRATION

Code No ……..

Name of the Interviewer……...

Date: ……

SECTION I:

1. What is your professional status?

SECTION II:

2. For how long have you been working in this institution?

Probe - on the position you are heading

- training on medicine registration

3. How many subordinates are working under you?

Probe - on their number,

-their experience

-and knowledge on medicines registration

4. What medicines registration process is all about?

Probe on
-the history when it started,
-current situation and
- future plans
-his experience on medicines registration

5. What are challenges of medicines registration

Probe on - time taken for assessment of dossier
-comprehensibility with regard to registration guidelines
-composition of committee members
-update of registration guidelines
-up date list of registered medicines
-integrity of evaluators

6. If you were in a position of highest authority, in your opinion what would be the first action that you would take to improve medicine registration process in Tanzania

ANNEX II

CHALLENGES OF MEDICINES REGISTRATION PROCESS IN TANZANIA

QUESTIONNAIRE: EVALUATOR

Code No ……..

Name of the Institution/Working place…….

Name of the Interviewer……...

Date: ……

SECTION I:

1. Gender: a) Male

b) Female

2. Your profession: a) Pharmacist

b) Medical Doctor

c) Veterinary Doctor

d) Others specify .....

SECTION II:

Please tick when necessary the answer of your choice

3. What are your daily activities

1.....

2.....

3.....

4. How long have been working on the same position?

a) 0-1 year

b) 2-5 years

c) 6 -10 years

d) Above 10 years

5. How long have you been doing medicines evaluation?

a) 0-1 year

b) 2-5 years

c) 6 -10 years

d) Above 10 years

6. Have you received any training on medicines evaluation/assessment?

a) Yes

b) No

If yes, explain where and for how long?

_____

_____

7. Do you know the core activity of Tanzania Food and Drugs Authority (TFDA)?

a) Yes

b) No

If yes, please explain

_____

8. Do you know what medicine registration process is?

a) Yes

b) No

If yes, please explain

_____

_____

9. Do you know information that are required to be submitted before dossier can be evaluated?

a) Yes

b) No

If yes, please explain

_____

_____

10. Do you know the importance of using standard operating procedure (SOP) during medicine evaluation?

a) Yes

b) No

If yes, please explain when it was last reviewed

_____

_____

11. Which are the important information required to be submitted in the dossier for generic products?

a). Application form

b). Information on Active Pharmaceutical Ingredients

c). Information on Finished Product

d). Information on safety data

12. During medicines evaluation, do you follow the SOP?

a) Yes

b) No

13. How many medicines evaluation have you done? _____ (*in numbers*)

14. How long do you normally take to evaluate one dossier?

a) Less than One day

b) 2 days

c) 3 days

d) More than 3 days

If working with Drug Regulatory Authority (TFDA), then answer question 15 and 16

15. How do you describe the support you get from the management?

a) Strongly agree

b) Agree

c) Undecided

d) Disagree

e) Strongly disagree

16. How much are you satisfied with your dossier evaluation payment?

a) Very dissatisfied

b) Dissatisfied

c) Undecided

d) Satisfied

e) Very satisfied

17. How often do you encounter dossiers that are insufficiently submitted resulting in rejection or queries being raised?

a) Rarely

b) Moderately

c) Very often

18. Was the registration guideline reviewed/updated recently within last 12 month?

a) Yes

b) No

If yes, explain if newly updated version comply with the current situation of medicines registration criteria of the WHO and other regional harmonisation policy?

_____

_____

19. What are challenges encountered during medicines registration process?

i)_____

ii)_____

iii)_____

iv)_____

20. If you were in a position of highest authority, what would be the first action that you would take to improve the registration process in the country?

_____

_____

xxxxxxxxxxxxx *Thank You* xxxxxxxxxxxxxxx

ANNEX III

CHALLENGES OF MEDICINES REGISTRATION PROCESS IN TANZANIA

QUESTIONNAIRE: REPRESENTATIVES OF MANUFACTURERS (DIRECTORS) AND PHARMACIST- INCHARGE

Code No ……..

Name of the Pharmacy…….

Location……

Name of the Interviewer……...

Date: ……

SECTION I:

1. Gender: Male

Female

2. Your profession: a) Pharmacist

b) Medical Doctor

c) Veterinary Doctor

d) Others specify .....

3. Your position

a) Director

b) Pharmacist in charge

SECTION II:

Please tick when necessary the answer of your choice

4. What are your daily activities

_____

_____

5. How long have you been working in the same position?

a) 0-1 year

b) 2-5 years

c) 6 -10 years

d) Above 10 years

6. How many companies do you represent in Tanzania? _____ (*in numbers*) and where are they located

i) Europe

ii) Africa

iii) Asia

iv) Others specify _____

7. How many dossiers have you submitted at TFDA for registration? _____ (*in numbers*) and among them how many have been registered?

a) 0-10

b) 11-20

c) Above 20

8. Is the time allocated for medicine registration process convenient?

a) Strongly agree

b) Agree

c) Undecided

d) Strongly disagree

d) Disagree

Question 9, 10, 11, 12, 13, 14, 15 and 16 should be answered by the superintendent pharmacist

9. Do you think your professional training has adequately prepared you to review dossiers for registration purpose?

a) Yes

b) No

10. Have you received any training on dossier preparation and compilation for registration purpose?

a) Yes

b) No

If yes, explain where and for how long?

_____

_____

11. Do you know the importance of carrying out medicine evaluation in the country?

a) Yes

b) No

If yes, please explain

_____

_____

12. Do you know the information that are required to be submitted before dossier can be evaluated?

a) Yes

b) No

If yes, please explain

_____

_____

13. Do you know what medicine registration process is?

a) Yes

b) No

If yes, please explain

_____

_____

14. Do you know which information are required to be submitted in the dossier for generic products?

a) Yes

b) No

15. If the answer for Q 14 above is Yes, please mention at least four (4) categories of information required

a. _____

b. _____

c. _____

d. _____

16. Are you aware of the importance of carrying out post marketing surveillance of medicines?

a) Yes

b) No

If yes, please explain

_____

_____

17. What challenges do you encounter during medicines registration process?

i)_____

ii)_____

iii)_____

iv)_____

18. In your opinion what should the TFDA management do in order to efficiently and effectively improve the process?

_____

_____

_____

xxxxxxxxxxxxx *Thank You* xxxxxxxxxxxxxxx

ANNEX IV

CHANGAMOTO ZA MCHAKATO WA KUSAJILI DAWA TANZANIA

DODOSO: WAKURUGENZI WATENDAJI NA WAFAMASIA WASIMAMIZI

Namba ya Fomu ……..

Jina la Famasi…….

Eneo……

Jina la Msaili……..

Tarehe: ……

SEHEMU YA KWANZA:

1. Jinsia: Mme

Mke

2. Taaluma yako: a) Mfamasia

b) Daktari wa Binadamu

c) Daktari wa MIfugo

d) Nyinginezo (taja) .....

3. Cheo chako

a) Mkurugenzi

b) Mfamasia Msimamizi

SEHEMU YA PILI:

Tafadhali weka alama ya vema palipo na ulazima au kwenye jibu la chaguo lako

4. Ni zipi shughuli zako za kila siku?

_____
_____

5. Ni kwa muda gani umekuwa ukifanyakazi katika nafasi hiyo?

a) Mwaka 0-1

b) Miaka 2-5

c) Miaka 6- 10

d) Zaidi ya miaka 10

6. Ni makampuni mangapi unayoyawakilisha nchini Tanzania? _____ (idadi) na yako wapi?

i) Ulaya

ii) Afrika

iii) Asia

iv) Kwingineko (taja)_____
_____

7. Umekwisha wasilisha ripoti ngapi za maombi ya kusajili dawa katika Mamlaka ya Chakula na Dawa Tanzania? _____ (idadi) na kati ya hizo ni ngapi zimeshapata usajili?

a) 0-10

b) 11-20

c) Zaidi ya 20

8. Je, ni kwa kiasi gani unaridhika na muda uliowekwa kwa ajili ya mchakato wa kusajili dawa?

a) Nakubaliana nao kabisa

b) Nakubaliana nao

c) Sijui

d) Sikubaliani nao kabisa

e) Sikubaliani nao

Maswali na. 9, 10, 11, 12, 13, 14, 15 and 16 yanapaswa yajibiwe na Mfamasia Msimamizi

9. Je, unafikiri mafunzo ya taaluma yako yamekuandaa kikamilifu kuhakiki ripoti hizo kama zimeandaliwa kwa kufuata miongozo ya usajili wa dawa?

a) Ndiyo

b) Hapana

10. Je, umekwishawahi kupata mafunzo ya aina yoyote, juu ya utayarishaji wa ripoti “dossier” kwa ajili ya kusajili dawa?

a) Ndiyo

b) Hapana

Kama ndiyo, elezea wapi na kwa muda gani?

_____

_____

11. Je, unajua umuhimu wa kufanya tathmini ya dawa katika nchi?

a) Ndiyo

b) Hapana

Kama ndiyo, tafadhali elezea

_____

_____

12. Je, unajua ni taarifa zipi zinazohitajika kuwasilishwa kabla dossier haijatathiminiwa?

a) Ndiyo

b) Hapana

Kama ndiyo, tafadhali elezea

_____

_____

13. Je, unajua mchakato wa kusajili dawa ni nini?

a) Ndiyo

b) Hapana

Kama ndiyo, tafadhali elezea

_____

_____

14. Unajua ni taarifa zipi zinahitajika kuwasilishwa katika dossier kwa ajili ya usajili wa dawa zilizonukuliwa/ kutoolewa kutoka kwa mgunduzi wa kwanza?

a) Ndiyo

b) Hapana

15. Kama jibu la swali na. 13 hapo juu ni ndiyo, tafadhali taja angalau kwa uchache makundi manne ya taarifa zinazohitajika

a. _____

b. _____

c. _____

d. _____

16. Je, unafahamu juu ya umuhimu wa kufuatiliaji dawa sokoni baada ya kusajiliwa?

a) Ndiyo

b) Hapana

Kama ndiyo, tafadhali elezea

_____
_____

17. Ni changamoto zipi unakabiliana nazo katika mchakato mzima wa kusajili dawa?

i)_____
ii)_____
iii)_____
iv)_____

18. Kwa maoni yako, utawala wa Mamlaka ya Chakula na Dawa unapaswa kufanya nini ili kuleta tija na ufanisi katika kuboresha mchakato wa usajili wa dawa?

_____
_____
_____

xxxxxxxxxxxxx *Asante Sana* xxxxxxxxxxxxxxx

ANNEX V

CHALLENGES OF MEDICINES REGISTRATION PROCESS IN TANZANIA

FORM OF APPLICATIONS OF MEDICINES REGISTRATION RECEIVED AND THEIR STATUS

Year	New dossier applications received	New dossier applications evaluated	New dossier applications not evaluated	Final remarks after evaluation			
				Registered	Queried	Rejected	Status not indicated
2010							
2011							
Total							

ANNEX VI

STUDY PARTICIPANTS INFORMED CONSENT FORM

CHALLENGES OF MEDICINE REGISTRATION PROCESS IN TANZANIA.

NAME OF INVESTIGATOR: MKUMBWA, SONIA H.

SPONSOR: TANZANIA FOOD AND DRUGS AUTHORITY

ADDRESS: MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
P.O BOX 65001,
DAR-ES SALAAM.

Identification number: _____

Introduction:

Greetings! This consent form contains information about the research named above. In order to be sure that you are informed about being in this research, we are asking you to read or have read to you this consent form. You will also be asked to sign it or make a mark in front of the witness. You will be given a copy of this form. This consent form might contain some words that are unfamiliar to you. Please do not hesitate to ask so that explanation can be given to whatever you might not understand.

Reason for the research:

You are being asked to take part in this research that aims at describing medicines registration process and eventually determine challenges in medicines registration in Tanzania so that we can come up with future solution if any about the problem.

General information and your part in research:

The research will involve answering questions depending on your position in that institution/working place. The interview will be carried at your work place and therefore you will not incur any cost as a result of participating in this study. No experimental exercise going to be carried out and your participation is voluntary and no penalties you're going to face in case of disagreeing in taking part from the study.

Possible Risks:

Since the study will be done using questionnaire and no experimental, this means no harm is expected because of joining the research study.

Possible Benefits:

As the aim of this study is to assess the challenges in medicines registration, your participation in the study will assist you to gain knowledge on how studies are carried out. Furthermore, your participation will have input in the foreseen findings that might improve the current situation of medicine registration.

Rights to participate or Discontinue

You are free to decide if you want to be in this research after brief explanation on the aim and procedure of the research. You will be allowed to disagreed in taking part on the study or discontinue from the study at anytime as you wish. The discontinuation or refusal to participate will not affect your right at any point in time.

Confidentiality:

All the information obtained from you regarding this study will be treated with high degree of confidentiality. No information will be provided to others without your consultation.

Compensation

No payment will be provided for anyone participating in this study.

Staying in the Research

If you agree to join the study, only the tools designed for this study will be used.

In case of problem/query contact:

If case of any matter on this study, please contact Ms. Sonia Mkumbwa (Tel: 0754 302 440), or Prof. A. Kamuhabwa, who are the coordinators of this study, MUHAS P.O BOX 65001, Dar es Salaam.

Your rights as a Participant

This research has been reviewed and approved by the Institution Research Board (IRB) of Muhimbili University of Health and Allied Sciences. An IRB is a committee that reviews research studies in order to help protect participants. If you have any questions about your rights as a research participant you may contact Prof. Mainen Moshi, Chairman of the College Research and Publications Committee, P.O Box 65001, Dar-es-salaam, Tel: 2150302-6.

Volunteer agreement

The above document describing the benefits, risks and procedures for the research titled (**CHALLENGES OF MEDICINES REGISTRATION IN TANZANIA**) has been read and explained to me.

I .....have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

Date:.....Signature or thumbprint of volunteer.....

If volunteers cannot read the form themselves, a witness must sign here:

I .....(eye witness) was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

Date.....Signature of Witness .....

ANNEX VII

CONSENT FORM (Swahili Version)

FOMU YA KUKUBALI KUJIUNGA KWA HIARI KATIKA UTAFITI KUHUSU CHANGAMOTO ZINAZOUKABILI MCHAKATO WA USAJILI WA DAWA TANZANIA

JINA LA MTAFITI: MKUMBWA, SONIA H.

MFADHILI: MAMLAKA YA CHAKULA NA DAWA

ANWANI: CHUO KIKUU CHA AFYA NA SAYANSI ZA TIBA MUHIMBILI
S.L.P 65001,
DAR-ES SALAAM.

Namba ya Utambuzi: _____

Utangulizi:

Salamu!

Fomu hii inajumuisha taarifa juu ya utafiti tajwa hapo juu. Ili kuthibitisha kukubali kwako kushiriki katika utafiti utasoma au kusomewa fomu hii ya kukubali na kisha utaisaini. Au utasaini kutumia kidole gumba mbele ya shahidi. Baadaye utapewa nakala ya fomu hii. Endapo hutaelewa usisite kuuliza kabla ya kusaini.

Sababu za kufanya utafiti:

Utafiti huu una nia ya kuelezea mchakato wa usajili wa dawa na hatimaye kubaini changamoto zinazoukabili ili hapo baadae zitafutwe mbinu za kuboresha kwa Mamlaka zinazohusika.

Taarifa za jumla na nafasi ya ushiriki kwako:

Utafiti huu ni wa hiari na utahusisha kujibu maswali kulingana na nafasi yako katika taasisi/kituo cha kazi. Hatutegemei utaingia gharama zozote kwa ushiriki wako kwani shughuli zote za utafiti zitafanyika katika sehemu yako ya kazi.

Athari tarajiwa:

Kwa kuwa utafiti huu utahusisha kujibu maswali yaliyopo kwenye dodoso, hivyo hatutegemei madhara wala hatari zozote kwa ushiriki wako kwenye utafiti huu.

Faida tarajiwa:

Kukubali kujiunga katika utafiti huu kutakusaidia kuongeza ufahamu wako katika shughuli za tafiti na pia utakuwa mmojawapo wa wale watakaofanikisha kugundua changamoto zinazoukabili mchakato wa usajili wa dawa nchini na kusaidia kuboresha mchakato huo.

Haki ya kushiriki au kutokushiriki:

Ushiriki wako katika utafiti huu ni wa hiari baada ya kupata maelezo kuhusu lengo na mchakato wa utafiti. Unaweza kuamua kutoshiriki au kujitoa kwenye utafiti muda wowote ule na kwa sababu yoyote ile. Maamuzi yako ya kuamua kujitoa/ kutokushiriki yataheshimiwa na hayataathiri mahusuiano baina yako na mtafiti.

Usiri:

Taarifa zote utakazotoa wakati wa utafiti zitatunzwa kwa siri na kutumika kwa lengo la utafiti tu na si vinginevyo.

Fidia:

Ushiriki wako katika utafiti huu ni wa hiari na hivyo hakutakuwa na malipo yoyote kwa ajili ya kushiriki kwako.

Kubaki katika utafiti:

Kama utakubali kushiriki katika utafiti huu, ni dodoso lililoainishwa pekee ndilo litakalotumika katika utafiti huu.

Kama una hoja/ tatizo lolote juu ya utafiti husika tafadhali wasiliana na:

Bi. Sonia Mkumbwa kwa simu ya kiganjani namba: 0754 302 440), au Profesa A. Kamuhabwa, Chuo Kikuu cha Afya na Sayansi za Tiba Muhimbili, S.L.P 65013, Dar es salaam, Simu Na: 0222150748

Haki zako kama mshiriki:

Utafiti huu umepitiwa na kuidhinishwa na jopo la Kamati ya Utafiti na Machapisho ya Chuo Kikuu cha Afya na Sayansi ya Tiba cha Muhimbili. Kama utakuwa na swali au maswali kuhusu haki zako kama mshiriki katika utafiti huu wasiliana na: Profesa Mainen Moshi, Mwenyekiti wa Kamati ya Utafiti na Uchapishaji, Chuo Kikuu cha Afya na Sayansi ya Tiba, S.L.P 65001, Dar es salaam.
Simu Na : 2150302-6.

Makubaliano ya hiari:

Maelezo ya hapo juu, yanayoelezea faida, hasara na taratibu za utafiti wenye kichwa kisemacho “Changamoto zinazoukabili mchakato wa kusajili dawa Tanzania” nimezisoma au kusomewa na kuzielewa.
Mimi ..... (andika jina lako) naridhia kushiriki katika utafiti na majibu yote niliyoyatoa kwa ufahamu wangu ni ya kweli.
Tarehe:.....Sahihi au alama ya dole gumba.....

Kama mhojiwa hawezi kusoma fomu hii mwenyewe, basi shuhuda wake atasaini pia:

Mimi.....nilikuwepo wakati faida, hasara na taratibu ziliposomwa kwa mhojiwa. Maswali yote yalijibiwa kwa mhojiwa. Aidha, mhojiwa amekubali kushiriki katika utafiti huu.

Tarehe..... Sahihi ya Shuhuda.....