

**ASSESSMENT OF AVAILABILITY OF CONTRACEPTIVES IN
HEALTH FACILITIES AND THEIR ACCEPTABILITY IN
KINONDONI MUNICIPALITY.**

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**Masters of Science in Pharmaceutical Management Dissertation of Muhimbili
University of Health and Allied Sciences.**

October, 2011.

**ASSESSMENT OF AVAILABILITY OF CONTRACEPTIVES IN HEALTH
FACILITIES AND THEIR ACCEPTABILITY IN KINONDONI MUNICIPALITY.**

**By
Ms. Neema Kalison**

**A dissertation submitted in partial fulfillment of the requirement for the Degree of
Masters of Science in Pharmaceutical Management (MSc Pharm Management) of the
Muhimbili University of Health and Allied Sciences.**

**Muhimbili University of Health and Allied Sciences
October, 2011.**

CERTIFICATION

The undersigned certify that he has read and hereby recommend for examination of dissertation entitled “*Assessment of availability of contraceptives in health facilities and their acceptability in Kinondoni Municipality*”, in partial fulfillment of the requirements for the degree of Masters of Science in Pharmaceutical Management of Muhimbili University of Health and Allied Sciences.



Prof. Kennedy Daniel Mwambete
(Supervisor)

Date:17th October 2011...

CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by the Muhimbili University of Health and Allied Sciences a dissertation entitled “*Assessment of availability of contraceptives in health facilities and their acceptability in Kinondoni Municipality*”, in partial fulfillment of the requirements for the degree of Masters of Science in Pharmaceutical Management.



Prof. Kennedy Daniel Mwambete
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Date:17th October 2011...

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DEDICATION

This work is dedicated to my family, my lovely husband Edwin Clemence, and my sons Ernest Rwezaula Edwin and Elvis Kaizirege Edwin for physical, psychological, moral and economical support you extended to me.

I dedicate this dissertation to my young sister Bupe Kalison for her moral support and encouragement. Also I dedicate this dissertation to my beloved late parents Mr. & Mrs. Kalison, as well as to my late brother Leonard A.Kalison, may the Almighty God rest your soul in eternal peace, Amen.

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ABSTRACT

Background: Majority of unintended pregnancies worldwide are results of contraceptive non-use, inconsistent use, or a reliance on ineffective methods of contraception. Key barriers to contraceptive use include financial constraints, lack of knowledge about the safety and efficacy of the various methods as well as the unavailability of contraceptives. Tanzania being one of the resources limited (developing) countries that face a myriad of socio-economic problems. For such countries family planning, which include usage of contraceptives, cannot be overemphasized

Objective: The study aimed to assess the availability of contraceptives in health facilities and their acceptability in Kinondoni Municipal residents aged between 18 and 55 years. It was designed to provide baseline data on contraceptive availability and documentations in health facilities, and knowledge as well as attitude towards contraceptives usage among Kinondoni residents.

Methods: This was a cross-sectional study involving collection of prospective and retrospective data for assessment of availability and acceptability of contraceptives. The study was carried out in Kinondoni Municipal between July 2008 to March 2011. The following settings were involved namely Mwananyamala Municipal Hospital, 3 Health facilities (Sinza, Magomeni and Mburahati) and 2 secondary schools (Mugabe and Manzese). Pharmacists in-charge for each health facility (Municipal hospital and health centers) were interviewed and from them permission to the records/data was obtained. Face to face interviews guided by structured questionnaire and checklists were employed for data collection from 156 voluntary respondents. Representative contraceptives namely vasectomies, condoms, inter uterine devices [IUD], implants, hormonal injectable, emergency contraceptives and hormonal pills were used for this purpose.

There were seven items to measure knowledge of an individual. If an individual gets all seven item correct then he/she was very knowledgeable. Knowledge on contraceptives was

measured on a scale of 0-7 based on 7 tracer items, whereby 80%-100%= implies very knowledgeable and 0%-49%= not knowledgeable at all. The tracer disease conditions that can be prevented by using contraceptives were malaria, STIs, HIV, Unwanted pregnancy, TB, Typhoid and not Effective at all.

Results: Three (3) health facilities were involved in assessment of availability of contraceptives. Overall availability of contraceptives was measured based on availability of at least three contraceptives (method mix). Out of 3 health facilities, 2 facilities used the method mix however they were in small amount. In a period between July 2008 and March 2011 there were no emergency contraceptives, spermicides nor implants in all health facilities. Documentation was generally poor especially at Sinza health center, which led to failure to obtain record on availability of contraceptives during that period.

The following contraceptives namely hormonal and condoms were available in larger quantities in all health facilities. The relatively more abundantly encountered hormonal contraceptives were micrognon (20%) and Lo-feminal (10%). Availability of male condom was (39%) while female (1%).

The selection criteria in all three health facilities were according to customer demand/need of contraceptives. Forecasting and/ or quantification of contraceptives were by consumption method in all three health facilities visited. On the other hand procurement was mainly by donation while distribution was by vehicles.

Slightly more than half of respondents 83 (53.2%) were not using contraceptives and out of these, 17 (10.9%) had used them before. Seventy three 73 (46.8%) were still using contraceptives. Sixty six respondents (42.3%) had never used any kind of contraceptives methods. Of those who had never used contraception methods, 10(15.2%) said they are not aware of contraceptive methods.

Conclusion: Availability of modern contraceptives was generally low in all three health facilities, and documentation was generally unsatisfactory especially at Sinza health center.

Majority of respondents (96.8%) had moderate knowledge of contraceptives however, demonstrated negative attitudes towards contraceptive usage.

Contraceptives were not very much accepted by respondents due to the purported side effects, being unaware of the commodities and/or negative perception like being against their religious belief. The selection criteria for procurement of contraceptives were consumers demands oriented. Forecasting and Quantification of contraceptives was mainly by consumption based method. Procurement of contraceptives was mainly by donation and the products were fundamentally distributed by vehicles.

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LIST OF ACRONYMS AND ABBREVIATIONS

HIV	Human immunity deficiency virus
IUD	Inter uterine devices
LMIS	Logistics management information systems
MOHSW	Ministry of Health and Social Welfare
MSH	Management science for health
NFP	Natural family planning
PID	Pelvic inflammatory disease
SCM	Supply chain management
STIs	Sexual transmitted infections
TB	Tuberculosis bacilli
TFDA	Tanzania Food and Drug Authority
TFR	Total fertility rate
UNFPA	United Nations population fund
WHO	World health organization

CHAPTER ONE

1.1. INTRODUCTION AND LITERATURE REVIEW

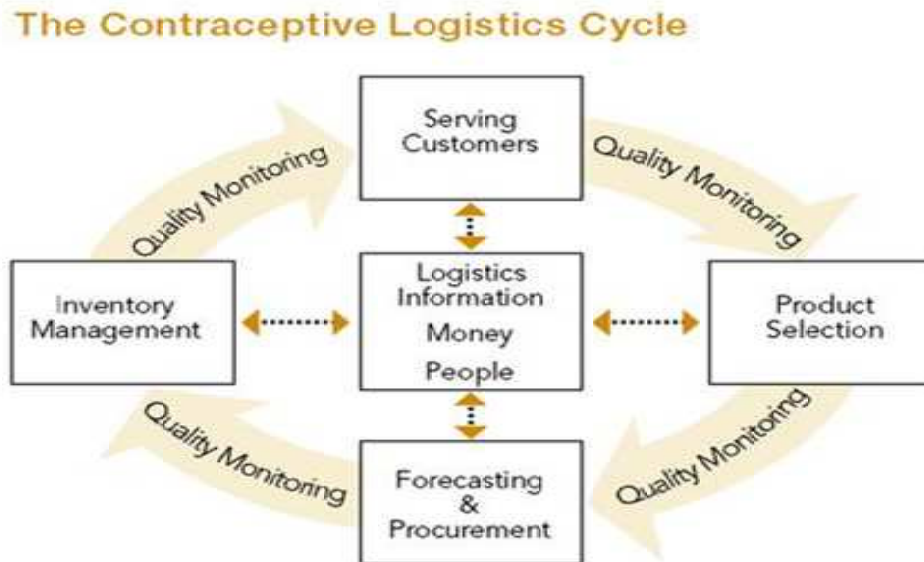
Getting contraceptives into the hands of clients may appear to be a routine task, but the process requires a well-functioning supply chain, which includes the support and commitment of policy-makers and the active involvement of many organizations and people. To ensure that women and couples are able to choose, obtain, and use the contraceptives that they want—the goal of contraceptives security efforts—policymakers and program managers must focus on having a well-functioning contraceptives logistics cycle (Figure 1).

The contraceptives logistics cycle focuses on the needs of customers—women and men who want to use family planning. A well-functioning contraceptives logistics cycle ensures that the right contraceptives products are selected based on customers' needs; that appropriate quantities of commodities are forecasted and on hand through timely procurement; and that adequate resources are available to procure the contraceptives. The contraceptive logistics cycle also includes inventory management—logistics management information systems (LMIS), warehousing, and transportation of commodities [1]. Well-functioning logistics systems and supply chains improve contraceptives availability, they help women and couples avoid unplanned pregnancies and help family planning programs be responsive to clients' needs [2]. Therefore, a better understanding of basic aspects of a contraceptives logistics cycle and the contributions of a well-functioning supply chain by all stake holders will enhance the success of family planning programs.

Policy-makers are vital to effective supply chain management [2]. They are responsible for creating and communicating their vision for the health sector and how it should operate. When policymakers understand the contributions the logistics system makes to program impact, quality of care, and cost-effectiveness, they become important advocates for ensuring continued logistics support. Policymakers can support and strengthen logistics systems by focusing attention on improving supply chains with

additional funding, helping staff develop their logistics management skills, holding staff accountable for using and sharing data from the LMIS, and routinely monitoring how well the supply chain is functioning.

Figure 1:



Source: DELIVER, *Strategic Decentralization: Centralizing Logistics*, 2001.

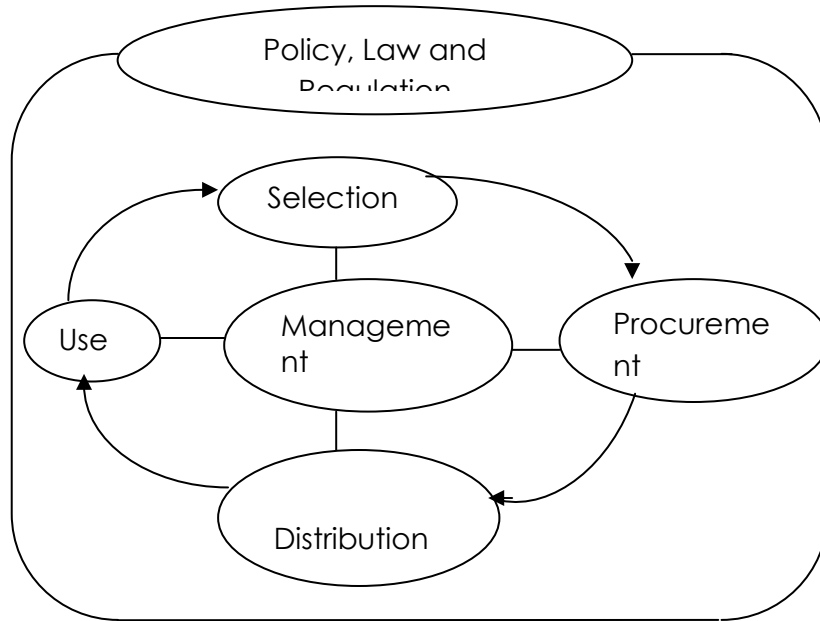
Accurate and timely information play a vital role in ensuring that the right contraceptives commodities are at the right location in time. Information should be generated from the LMIS, which allows programs to manage and monitor the flow of contraceptives supplies. A well-functioning LMIS collects information on client preferences, contraceptives use, stock levels, and amounts to order. With this information, the LMIS can account for products in the supply chain and reduce loss, damage, waste of supplies, stock outs, and overstocks, which ultimately improve the program's effectiveness and improve contraceptive security. Input from the LMIS is critical to forecasting demand, procuring commodities, and distribution to facilities and clients.

Good supply chain system is an important aspect to ensure delivery of the right product with the right quantity and quality at a right place and time with cost effectiveness.

For pharmaceuticals and/or medical devices supply chain is very important, in which case it can be defined as the network of retailers, distributors, transporters, storage facilities and suppliers that participate in the sale, delivery and production of the product [3].

Supply chain in medicines/medical devices goes hand in hand with pharmaceutical management framework that includes selection, procurement, distribution use, management support and policy as well as law and regulation that are applied (Figure 2).

When a proper selection of medicines and quantification of needs are done properly, the procurement process and distribution of medicines take place at a right time, then the required medicines will be available at the right time to the right users. So the availability of any medicine depends on right selection, right forecasting and quantification, right procurement and distribution [3].

Figure 2:Pharmaceutical management framework

Source: Management Science for Health (MSH) 2007

One fifth of the worldwide burden of illness and premature deaths is due to problems in reproductive and sexual health [4]. In May 2004, the 57th World Health Assembly adopted the World Health Organization's strategy on reproductive health to accelerate progress towards meeting the Millennium Development Goals, which include significant reduction of maternal mortality worldwide. One aspect of that strategy includes providing high quality contraceptive services. Tanzania policy on contraceptives advocacy on condom usage is fundamentally based on prevention of further spread of HIV/AIDS infection; while for the other kind of contraceptives is to reduce the maternal and infant mortality as an adoption of WHO strategy on reproductive health. Methods of contraception make it possible for individuals and couples to determine the number and spacing of their children [4] and to reduce reliance on abortion as a means to get rid of unwanted pregnancies. The vast majority of unintended pregnancies are due to contraceptive nonuse, inconsistent use and reliance

on ineffective methods of contraception [5]. Lack of a method of choice, knowledge about safety, effectiveness and availability of choices as well as financial constraints are listed among key barriers to contraceptive use worldwide [4].

When effective methods of contraception became available in the second half of the 20th century, it was recognized as the “first reproductive revolution” [6]. Some of the most common contraception methods are contraceptives, calendar and abstinence and/or extravaginal ejaculation. However today there are different types of contraceptives with different routes of administration/usage, including hormonal pills, spermicidal, IUDs, condoms, rings and others [6]. Direct access to contraceptives is important for all types of contraceptives and especially for emergency contraceptives, since they are most effective within 72 hours after unprotected intercourse-the earlier it is used the more effective the results [7, 8]. Emergency contraceptive is a relatively new method which could also prevent a significant number of unwanted or mistimed pregnancies [9]. The determinants of contraception methods use are women’s/couples and provider’s knowledge of the method; prescription and dispensing patterns of physicians and clinics; and acceptability of the method [9, 10]. Women and men who know where family planning services and modern methods of contraception are available are more likely to use them [11]. A major barrier to contraception access is lack of availability of contraceptives commodities at pharmacies, which has not been thoroughly investigated [9, 12]. However, prevalence of modern methods of contraception is higher in countries where access to all methods is uniformly high [13].

Two main factors that determine safe behavior in terms of preventing unwanted or mistimed pregnancies are knowledge about contraceptive commodities and their availability. These factors are interrelated, since lack of both patient and providers’ knowledge results in the lack of supply and demand [9]. For an individual to make an informed choice and to use an appropriate method of contraception, available methods should include male and female methods, some temporary, reversible methods as well as long-acting and permanent ones [13,14]. As the case in Tanzania, there are barriers to the acceptance of vasectomy [15]. Contraceptive use has increased in many developing

countries in the past decade, but significant challenges still exist. The leading indicators suggest that there is much progress still to be made: about 76 million (4 out of 10) pregnancies in low income countries are unintended [16]. Approximately 35 million lives are terminated through induced abortion. One third of maternal deaths occur among women with unintended pregnancies. The majority of unintended pregnancies are caused by non-use of modern family planning practices. As many as 200 million sexually active and fertile women in low income countries report interest in spacing or limiting births (i.e., are at risk of unintended pregnancies), but do not practice modern family planning practices.

Reasons range from limited availability of contraceptive methods to issues in accessing services to lack of information about contraception and pregnancy risk. Anecdotal evidence pointed to constrained supply availability, as a large contributing factor to current contraceptive non-use and suggested that it will only become more important in the future, given projections of increasing demand [16]. The numbers of women of reproductive age and the proportion that use modern contraceptives are both expected to rise substantially, placing additional strain on the system.

The following concrete examples (cited in “Countries and Risk” meeting notes, UNFPA reports, and interviews) have spurred concern throughout the field:

In early 2005, Ethiopia was at risk of running out of all the major contraceptives in the country [9]. In one district of India, only 29% of ever-married women who were using condoms had a regular source of supplies during the previous three months; 59% had an irregular supply and 12% received no condoms [17].

In May of 2002, Tanzania was left with 1 million condoms – enough for about 1 week after UNFPA withdrew 10 million condoms due to quality problems. Furthermore, it was revealed that approximately 76% of health settings/ facilities in several African countries lack either one or more of the following contraceptives viz. pills, condoms, and injectables [17].

It is a high time now to devote some efforts on availability of contraceptives and thus contribute a grain of success in the reproductive health field by identifying problems that may impede to meet the reproductive health goals. Consequently, the present dissertation carried out an investigation on the prevalence of contraceptives usage focusing on availability and acceptability among sexually active individuals in Kinondoni Municipal. Thus providing baseline data on contraceptive acceptability, availability and documentation as well as knowledge and attitude about contraceptive medicines

1.2 PROBLEM STATEMENT

Family planning is an important aspect of controlling spacing the number of children one wants to bear. Family planning methods (contraception methods) in what and in order to be applied must be accepted by the users.

Among several ethnic groups/tribes, there is a belief that once a woman uses family planning methods (contraceptives) she is going to be unable to get a pregnancy because it kills ovaries in the fallopian tubes. Moreover, some religions teach their followers that using contraceptives is equal to killing and is ungodly. On the other hand, some women fill proud of giving birth every year or sometimes they are forced by their partners to deliver a child in every year or some people do a competition for bearing children i.e. Coastal region and Pemba.

Regardless of an increased use of contraceptives in many developing countries in the past decade, but significant challenges still exist; particularly on the availability of contraceptives commodities, which is an important lever to addressing challenges.

Four primary issues constrain contraceptives commodity availability today:

- Donor funding allocation and procurement activities are inefficient
- Country planning and procurement is fragmented and slow
- Underserved areas exist across and within countries
- Public funds, subsidize to certain populations who can't afford to pay.

Fully tackling all of these availability and acceptability will have the potential to reduce unintended pregnancies. A better knowledge of factors hindering the acceptability of contraception methods could help guide biomedical scientists and health care providers in proposing and/or developing new methods.

1.3 RATIONALE

Contraceptives should help people to take control of their lives as well as their fertility and preventions of sexual transmitted infections (STIs). These are services that are centered on keeping women and men satisfied with and using contraceptives in order to keep the fertility rate down and protection against STIs. A range of contraceptives should be available to allow for flexibility due to the fact that a woman and man have different needs at different stages of their lives. With more methods, opportunity for a user to try different methods increases, if need be, until they find one that is best for their health, specific needs and fertility priorities [18].

Therefore, there is a great need to assess the availability and acceptability of contraceptives so as to reduce the prevalence of unintended pregnancies that may lead to abortion with its potential life-threatening complications. Not only that by addressing these issue we may lead to increased spacing of children among spouses, but also to fight the ever spreading HIV/AIDS pandemic and other STIs. Fight against HIV/AIDS is inaccessible since affect the all age groups of people due to its socio-economic impacts, particularly in developing countries like ours.

1.4 EXPECTED OUTPUTS

An increased availability of contraceptives in health facilities in the study area. The study also aims to increase awareness and thus acceptability of contraceptives among the study population, which will go hand in hand with attitudinal change as well as perceptions of the clients toward the contraceptives methods as result of increased knowledge through dissemination of the study findings.

1.5. OBJECTIVES

1.5.1 Broad objective

To assess availability of contraceptives in health facilities and their acceptability in Kinondoni Municipality.

1.5.2 Specific objectives

- To assess availability and documentation of contraceptives in health facilities.
- To assess the knowledge and perception towards the contraceptive methods/usage among the study population.
- To assess acceptability of contraceptives among communities of Kinondoni Municipal.
- To assess factors affecting selection of contraceptives methods among the study population.
- To assess the methods of forecasting and quantification of contraceptive medicines.
- To assess methods of procurement and distribution of contraceptives in the health facilities in the study area.

CHAPTER TWO

2. METHODS

2.1 Study design and Areas.

This was a cross-sectional survey designed study. The study areas were Magomeni, Sinza and Mburahati health facilities for assessing availability. Sexually active individuals were obtained from the following locations: Mwananyamala hospital, Sinza health center, Magomeni health center, Mugabe Secondary School and Manzese Secondary School.

2.2 Study instrument

A semi-structured questionnaire and check list forms were used to capture the necessary information to assess the availability and acceptability of contraceptives.

2.2.1 Prospective Data Collection.

A questionnaire included the following key aspects: knowledge, attitude/perception of the study population towards contraceptives usage, preference of contraception methods, reasons for their preferences as well as any obstacles encountered in using the methods.

2.2.2 Retrospective Data Collection.

The designed checklist forms contained all the selected contraceptives, brand names, producer, if the medicine is expired or is not expired, time out of stock in days, quantity/units and dosage for measuring availability of contraceptives. Also the designed form looked into factors influencing selection, forecasting/quantification methods, procurement methods and distribution of contraceptives.

2.3 Study Participants.

The pharmacist in charge of all three health facilities namely Mburahati, Sinza and Magomeni were involved in the retrospective study whereby data on availability of contraceptive were collected.

Sexually active men and women of child bearing age [18 and 55 years of age] were involved in the prospective study through which data/information on acceptability and attitude towards contraceptives usage were collected. The sites to get these active people were Mugabe and Manzese Secondary Schools, Mwananyamala, Sinza and Magomeni Health Facilities [Kinondoni].

2.4 Variables

For the purposes of this study, availability was defined as: the present of at least three means/methods of modern contraception in each health facility in Kinondoni Municipal at the time of investigation.

Key indicators:

Percentage (%) of unexpired contraceptives

Percentage (%) of time out of stock of contraceptives.

In this research, acceptability was defined as the quality which makes an object or person attractive and/or satisfactory for consumption without necessarily or entirely basing on the ability possess or buy a particular item. Acceptability was measured in terms of proportion {percentage} of ten clients in which seven of them are using the modern methods of contraception.

Key indicators:

Percentage {% } of clients who report being satisfied with the services given by health providers.

Number of contraceptives medicines among ten (10) best sellers in private sectors.

2.5 Ethical consideration

These were addressed by seeking both informed verbal and written consents from clients of participant facilities i.e. hospital, health centers, schools and eligible individuals as per study criteria.. The objective of the study was well described and sufficient time was allocated for each client of participating facility to decide whether to participate in the study or not. For confidentiality purpose names of the clients were not disclosed. The permission at these facilities was addressed by seeking written consents from District Executive Director of Kinondoni Municipal; the permission letter was shown to the facilities in charges/supervisors for researchers to conduct the study.

2.6 Sampling technique

Sampling of the health facilities and schools was done by convenience because of the logistics. Health facilities and schools to be studied were Mwananyamala hospital, Sinza health center, Magomeni health center, Mburahati dispensary, Mugabe and Manzese Secondary Schools. The sample size of patients was calculated by using the following formula:

$$n = \frac{1.96^2 \times p(1 - p)}{d^2}$$

Where n = required sample size

p = proportion of target population estimated from previous study

d = is the degree of precision of the study (0.05)

z = is the standard normal deviation that correspond to 5% level of statistical significance that is 1.96

Based on one previous study, the largest proportional of clients who were not knowledgeable on contraception methods was 93%; p = 93% [19].

$$\alpha = z/2 = 0.05/2 = 0.025/2 = 0.0125$$

And from the table of normal distribution, z reads 2.24

$$\text{Hence } n = \frac{2.24^2 \times 0.93(1 - 0.93)}{0.05^2} = 130$$

Adjusting for missing data and recall bias add 20% to the above sample size (26 clients)

Hence the total number clients to be involved in the study were 156.

$$n=156$$

2.7 Study limitations.

Inclusion criteria

- Sexually active women: Were those clients of child-bearing age i.e. age bearing group ranging from 18-45 years of age and they should not have any reproductive problems.
- Sexually active men: Were those clients of child bearing age group ranging from 18– 50 years of age and they should not have reproductive problems.
- The study was conducted only in Public health facilities and schools and only the TFDA registered contraceptives were assessed.

Exclusion criteria

- Individuals/clients under 18 years old (both men and women), 46 and above for women where 51 and above for men were excluded in the assessment.
- All clients/individuals with reproductive problems were excluded in the assessment.
- All women and men who were unwilling to participate in the study.
- Individual/clients residing out of Kinondoni Municipal and/or on transit.

2.8 Hypothesis.

There are no problems of availability of contraceptives in health facilities and their acceptability in Kinondoni Municipality.

2.9 Data collection method:

Data was collected by face-to-face interviews with the respondent which was guided by semi-structured questionnaires and checklist. The questionnaire and checklist centered on the following key aspects: availability, acceptability, types of contraceptives available in the studied health facilities/centers, modes of procurement and selection as well as factors influencing the selection methods of contraception.

2.10 Data analysis

At the end of the survey all data were cleaned and validated to ensure objectivity and all the consistent questionnaires were numbered and compiled. All the open ended questions were coded prior data entry into the Statistical Package for the Social Science (SPSS Version17). Descriptive statistics (cross-tabulations, frequencies and explorative analysis) were carried out to explore on the respondent knowledge, attitude and acceptability of contraceptive methods usage. Association and differences on the assayed parameters among the respondent sex and age groups were analyzed by Chi-Squared test. Significance level was set at $p < 0.05$.

CHAPTER THREE

3. STUDY RESULTS

3.1 Socio-demographic characteristics of the study population.

The study was carried out in Kinondoni Municipal between July 2008 to March 2011. The following Health facilities were involved namely Sinza, Magomeni and Mburahati for assessing availability. Sexually active individuals were obtained from the following locations: Mwananyamala hospital, Sinza health center, Magomeni health center, Mugabe Secondary School and Manzese Secondary School. The distributions of the respondents were circumstantial.

The study involved 156 respondents from whom knowledge, attitude and acceptability of contraceptives were investigated. Of those 156 respondents 112 (71.8%) were females and 44(28.2%) were males. Mwananyamala constitute 47 (30.1%), Manzese 25 (16%) as indicated in table 1. Majority of the participants were of Secondary School 85 (54.5%) and the least was of Advance Secondary School as shown in table 2.

Table 1: Distribution of Respondents by localities

Name of the location	Quantities (%)
Mwananyamala hospital	47 (30.1)
Magomeni health center	29 (18.6)
Sinza health center	30 (19.2)
Mugabe Secondary School	25 (16)
Manzese Secondary School	25 (16)
Total	156 (100)

Table 2: Socio-demographic characteristics of the study population.

Variable		Number of Interviewees (%)
Sex	Male	44 (28.2)
	Female	112 (71.8)
	Total	156 (100)
Education	Primary	62 (39.7)
	Secondary	85 (54.5)
	Advance Secondary	4 (2.6)
	College	5 (3.2)
	Total	156 (100)
	Age groups	18-22
23-26		39 (25)
27-30		26 (16.7)
31-35		12 (7.7)
36-45		6 (3.9)
Total		156 (100)

The ages of the respondents ranged from 18-45 years, categorized into 5 groups as shown on Table 2. However, no significant differences ($p < 0.05$) with respect to age were observed between females and males.

3.2 Availability of contraceptives

Three (3) health facilities were involved in this study in which availability of contraceptives was determined. Overall availability of contraceptives was measured through availability of at least three contraceptives (method mix). This allows individual to choose the most preferable and appropriate method based on preferences and circumstances. Of all the 3 health facilities, 2 had the method mix available however they were in small amount (percentage). But in all three (3) health facilities there were no emergency contraceptives, spermicides nor implants/Norplant between July 2008 and March 2011 when this study was conducted. Documentation was generally poor especially at Sinza health center, which led to failure to obtain record on contraceptives from July 2008 to June 2010. However from July 2010-March 2011 there were records.

In all three (3) health facilities the contraceptives which were available in large quantities were hormonal (40%) and condom contraceptives (40%), IUD was 12% while the least was Vasectomy/Minlap 8%.

The most abundantly encountered hormonal contraceptives were micrognon (20%) and Lo-feminal (10%). Availability of male condom was (39%) while female (1%). Other items are as summarized on table 3.

Table 3: Availability of hormonal and condom contraceptives.

Contraceptive name	Percentage (%)
Micrognon	20
Lo-feminal	10
Depo-Provera	7
Microval	3
Male condom	39
Female condom	1
Total	100

The availability of contraceptives in each health facility was as listed in table 4.

Table 4: Availability of contraceptives in each health facility.

Health facilities	Contraceptives (%)			
	Hormonal	Condom	IUD	Vasectomy/Minlap
Magomeni	41	42	14	3
Sinza	40	39	15	6
Mburahati	48	52	0	0
Total	129	133	29	9

Overall availability of contraceptives from July 2008 –June 2009 was 36%, while in July 2009 –June 2010 was 42% and July 2010-March 2011 was 45%. In all three years condom and hormonal contraceptives were the only items that were available in relatively large quantity (40%) and (40%), against the rest (8%) $p < 0.004$.

The selection criteria in all three health facilities were according to the client (users) of those contraceptives. The forecasting/quantification method was consumption based in all three health facilities. On the other hand procurement was by donation while distribution was by vehicles/cars.

3.3 Respondents knowledge of Contraceptives.

There were seven items to measure knowledge of an individual. If an individual gets all seven item correct then he/she was very knowledgeable. The seven items were then grouped into three percentages scores, namely 80%-100%= Very knowledgeable, 50%-79%= moderately knowledgeable and 0%-49%= Not knowledgeable at all.

When the respondents were asked whether contraceptives were effective measures in preventing malaria, STIs, HIV, TB, Typhoid, unwanted pregnancies or not effective at all: One respondent (0.6%) said yes it is effective in preventing malaria, 97 (62.2%) said it is not effective in preventing STIs, 96(61.5%) said it is not effective in

preventing HIV infection, 5(3.2%) said it is not effective in preventing unwanted pregnancies and rest of the responses are shown in table 5.

Table 5: Interviewees responses on contraceptives effectiveness

Tracer items	Number of respondents(%)		
	Yes	No	No response
Malaria	1 (0.6)	155 (99.4)	-
STIs	59 (37.8)	97 (62.2)	-
HIV	60 (38.5)	96 (61.5)	-
Unwanted pregnancy	150 (96.2)	5 (3.2)	1 (0.6)
TB	-	156 (100)	-
Typhoid	-	156(100)	-
Not effective at all	-	156(100)	-

Majority of the respondents 151(96.8%) had moderately knowledge of contraceptives, 5(3.2%) had no knowledge as indicated in table 6. Of those who had moderate knowledge on contraceptives usage, 108 (96.4%) were females and 43(97.7%) were males. Females were relatively more knowledgeable compared to males, $p < 0.0025$. Respondents with age between 18 and 22 years were relatively more knowledgeable compared to other age group $p < 0.05$, as that age was of secondary school as indicated in table 6.

Table 6: Interviewees' knowledge of contraceptives in respect of demographics.

Variables		No knowledge	Moderate knowledge	Total	P values
Sex	Female	4(3.6%)	108(96.4%)	112(100%)	0.0025
	Male	1(2.3%)	43(97.7%)	44(100%)	
	Total	5(3.2%)	151(96.8%)	156(100%)	
Ages	18-22	5(6.8%)	68(93.2%)	73(100%)	0.05
	23-26	0	39(100%)	39(100%)	
	27-30	0	26(100%)	26(100%)	
	31-35	0	12(100%)	12(100%)	
	36-45	0	6(100%)	6(100%)	
	Total	5(3.2%)	151(96.8%)	156(100%)	
Education level	Primary	1(1.6%)	61(98.4%)	62(100%)	0.0003
	Secondary	4(4.7%)	81(95.3%)	85(100%)	
	Advance Secondary	0	4(100%)	4(100%)	
	College	0	5(100%)	5(100%)	
	Total	5(3.2%)	151(96.8%)	156(100%)	

3.4 Respondents' acceptability and attitudes towards the use of contraceptives

Slightly more than half of respondents 83 (53.2%) were not using contraceptives and out of these, 17 (10.9%) had used them before. Sixty six respondents (42.3%) had never used any kind of contraceptives. Of those who had never used contraceptives, 5 (7.6%) said they used calendar-based contraception method while 15 (22.7%) said they are married and they want more children because contraceptives causes infertility. Other responses are as summarized on table 7.

The frequency of contraceptives usage was not very much associated with the respondents knowledge about contraceptives, $r=0.001$, $p<0.52$. However there was a significance difference on contraceptive usage among females and males $p< 0.0025$. There was an association between education and contraceptive usage, $r=0.7$ $p< 0.03$.

Table 7: Respondents justification to why had never used contraceptives.

Responses	No. of respondent (%)
Not aware	10 (15.2)
Are not good for their health	9 (13.6)
Are not involved in sexual activities(students)	10 (15.2)
Don't have children	12 (18.2)
Believes	5 (7.6)
Calendar	5 (7.6)
Married they want more children(infertility)	15 (22.7)
Total	66 (100%)

About seventy three respondents, (46.8%) were using contraceptives and 17(10.9%) had used them before. Of 73 interviewees, 35 (22.4%) preferred condoms compared to other contraceptives ($p<0.001$). It was also revealed that 43 (27.6%) respondents initiated contraceptive usage at the age of 18-22 years.

Figure 3: The interviewees' preferences for contraceptives.

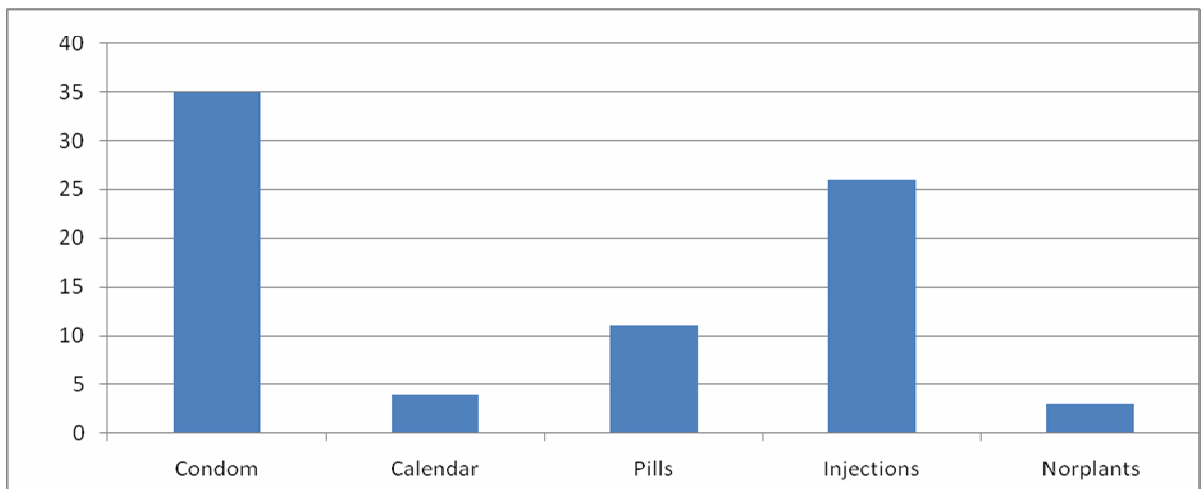


Table 8: Respondents reasons for preference on particular contraceptives.

Reasons	No. respondents (%)
Easy availability.	41 (52.6)
Some contraceptives are for men.	4 (5.1)
More useful for prevention of unwanted pregnancy and STIs.	17 (21.8)
Other methods have side effects.	11 (14.1)
Unawareness of other methods.	5 (6.4)
Total	78 (100)

When respondents were asked if by any chance they had ever changed the contraceptives they were using, 69 (44.2%) said NO and 9 (5.8%) said YES. A total of 78 (50%) people did not respond to the question, which also constitute 50% of the total interviewees. For those who said had never changed the contraceptives, the reasons for maintaining the use are given on table 8. While for those who said YES the main reason was because of the side effects which are indicated in table 9.

Likewise, investigation on the respondents' reluctance to use contraceptives revealed that most of them were afraid of possible side effects and other reasons are as summarized on table 9.

Table 9: Common side effects mentioned as obstacles to contraceptives usage.

Side effects	No. of respondents (%)
Infertility.	14 (37.8)
Alteration of menstruation.	6 (16.2)
Dizziness and tachycardia.	4 (10.8)
Gastritis.	2 (5.4)
Pelvic inflammatory.	5 (13.5)
Watery vagina discharge and gastritis.	6 (16.2)
Total	37 (100)

It was revealed that 46 (29.5%) respondents have experienced objection from their partners with regards to usage of contraceptives, while 110(70.5%) had never experienced any objections from their partners. For interviewees who have had experienced objections from their partners, the given reasons for the objection on contraceptives usage were the same as for those who had never used the contraceptives before which are listed on Table 7.

On the other hand, for those who had never experienced objections/denied on contraceptives use, the reasons for this positive attitude towards contraceptives usage were similar to those given by respondents who were still using contraceptives (Table 8).

CHAPTER FOUR

4. DISCUSSION

The countries with the highest rates of fertility also have the highest rates of maternal, infant, and child mortality. African people have long valued fertility, and as a result, many couples have large families. Each time a woman in one of the world's poorest countries becomes pregnant, her risk of dying from that pregnancy is as much as 200 times greater than the risk for a woman in the United States or Europe (57). Because of the high fertility rate, poor health conditions in general and inadequate availability of medical care, the risks of pregnancy are higher in Africa than anywhere else on earth. An African woman's chance of dying from pregnancy-related causes -obstructed labor, postpartum hemorrhage, pregnancy-induced hypertension, postpartum infections, and unsafe abortion -averages 870 per 100,000 live births (57). In contrast, the risk of maternal death in industrialized nations averages 27 per 100,000 live births.

Simply providing contraceptives to women who desire it could reduce maternal deaths by as much as one-third (57). Family planning (contraceptives) also protects women by preventing the risk factors that contribute to maternal mortality and morbidity. The highest risks of mortality are those for pregnancies among women who are too old (over 35), too young (under 16), or who have borne more than five children.

Many African families still measure their riches by the number of healthy children they bear. Family planning programs, along with diarrheal treatment programs, mass immunizations, health services, and nutrition programs, help contribute to children's well-being (58). Family planning contributes indirectly to children's health, development, and survival by reducing the risk of maternal mortality and morbidity. The death of a mother is traumatic; losing a mother has an immense impact on the emotional well-being of the family.

Hormonal, condoms, spermicidal, vasectomy/minlap, intra-uterine devices, norplant's/implants and emergency contraceptives they are the most popular forms of

contraceptives around. What they have in common is that they are all “barriers”-they block the sperm from ever reaching the uterus, thus preventing fertilization and pregnancy. But though they work in similar ways, each form of barrier contraceptives has its advantages and disadvantages, regardless their contradictory results (20, 21).

The choice of contraceptives depends on the consumers’ need and/or want. Consequently, it is important to know the extent of staff training and the availability of support facilities for each level of the health care system before deciding where individual contraceptives will be made available (3). In all three health facilities that were visited, the selection criteria of family planning (contraceptives) were clients based ones. This could be because the staff are not knowledgeable about contraceptives, thus they fail to convince the client (users) about the safety and efficacy of other methods of contraceptives which the client does not want to use them. Another reason, could be because they are expensive or they procure by donation, as the case in all three facilities. Likewise forecasting and/or quantification method in all three health facilities was by consumption method. The consumption method uses data on contraceptives utilization/consumption, and thus gives the most accurate prediction of future needs (22). Large, well-established contraceptives supply systems rely primarily on the consumption method. To be reliable, the consumption data must come from a stable supply system with a relatively uninterrupted supply and a full supply pipeline. However consumption data may or may not reflect rational prescribing and use of contraceptives (22).

The surveyed health facilities depended on previous experiences (types of products) that were commonly used by the residents, disregarding new/innovative contraception means. This is mainly because the consumption method uses records of past consumption of individual contraceptives to project future needs so it must have accurate consumption data and also can perpetuate irrational use of contraceptives. In all three health facilities the procurement method of contraceptives was by donation. Most contraceptives donations are given with the best of intentions but can nevertheless create problems at the receiving end. Often donated contraceptives are not relevant to

the needs of the recipient, or they arrive unsorted or close to expiry (22). As the case of contraceptives, the ones that clients like the most e.g. Norplant', its availability was limited, contrary to micrognon that was available in all three health facilities, but not frequently used by people.

Condoms and hormonal contraceptives were available in relatively higher percentage in all three health facilities compared to intra-uterine devices. This obliged an individual to use the available method because of the unavailability of the method of choice. One previous study shows that, availability of contraceptives significantly declined in the public sector in 2005 compared to 2000. This trend was explained by the decline of contraceptives donations from different NGOs, donors and/or individuals (23). This study also revealed that all public facilities had the same brand names of contraceptives.

Availability of contraceptives in the public sector is critical for the low socioeconomic status population. As the case in our findings most of the clients who were/are users of contraceptives were/ are students of secondary schools with ages ranging from 18-22 years. This is contrary to one previous revelation whereby contraceptives were largely used by less-educated, low income, young, minority and unmarried women (25, 26).

Despite the availability of condoms and hormonal pills to be relatively high in all types of facilities, IUDs and norplant's/implants which was not much preferred by the respondents were difficult to find in all health facilities. The reason for not preferring IUDs or Implants can be either because of unavailability, or low knowledge of staff on the safety, efficacy and how to use, thus their inability to educate the clients on their use as well as safety.

It is well known that emergency contraception pills can reduce the risk of unintended pregnancy by at least 75% if taken within 72 hours of intercourse. International data also demonstrate that emergency contraceptives have played a significant role in reducing the abortion rate in the United States: as many as 51,000 abortions were averted in the United States in 2000 by the use of emergency contraception pills alone. In Tanzania, emergency contraceptives and spermicides are the least-known and the most underused family planning method among providers and clients. The urban and

rural communities need better access to emergency contraceptives and spermicides through health facilities (23). As the case in Kinondoni Municipal these were not available from July 2008-March 2011.

According to the epidemiological prevention equation (27), it is unquestionable that a lower-efficacy product used consistently could have a greater impact on reducing infection at the individual and population level than a higher-efficacy product that is used less consistently. In actual fact, although condoms were available in relatively large amount compared to other contraceptives: condoms are highly effective when used perfectly but are often used incorrectly or not at all because they can be difficult to use and are perceived as reducing sexual pleasure (28-29).

Therefore spermicides/microbicide seem to be more user friend and perceived as interfering less with sexual pleasure, and the use can be initiated by the woman. The use of intravaginal microbicides such as polybiguanides (PBGs), WHI-07 (which is a novel dual-function aryl phosphate derivative of zidovudine with potent ant-HIV with spermicidal activities), PRO 2000 gel, vanadocene dithiocarbamate (VDDTC), sodium dodecyl sulfate plus C31G has gained support as a strategy for the protection of women against HIV-1 and other STD pathogens (29-34). However, it is succinctly clear now that no single agent will be able to prevent sexual transmission of HIV long term. Consequently, one would be wise to plan the control of HIV infection globally over the next decade without assuming that a vaccine will be available. It is important spermicides to be available in our public health facilities, as the case in our findings these spermicides contraceptives were not available since July 2008- March 2011 when this study was conducted.

The respondents demonstrated moderate understanding of contraceptives. Regardless, that they don't use them, but they recognize their usefulness and thus importance in preventing unplanned pregnancies and STIs. Two main factors that determine safe behavior in terms of preventing unwanted or mistimed pregnancies are knowledge about contraception methods and their availability. These factors are interrelated, since lack of both patient and providers' knowledge results in the lack of supply and demand

[9]. For an individual to make an informed choice and to use an appropriate method of contraception, available methods should include male and female methods, some temporary, reversible methods as well as long-acting and permanent ones [13,14]. As the case in Tanzania, there are barriers to the acceptance of vasectomy [15]. Our study's findings show that vasectomy and minlap were available in small percentage (8%) and all the respondents (n=156) did not say anything about vasectomy/minlap as if it does not exist. This could be because of lack of knowledge of patients and provider about vasectomy/minlap hence lack of demand. Females were more knowledgeable compared to males, this could be because female are more prone to become pregnant at earlier ages even as low as 12 years if they engage in sexual activities, so they earlier seek for contraceptives.

The present study revealed significance differences on knowledge about contraceptives with respect to education. Majority of respondents with secondary school education were more knowledgeable compared to other groups. The reason could be because they want to be protected from STIs, HIV and unwanted pregnancies as most of them were still schooling. Despite the findings demonstrating that the respondents (secondary school students) don't use the other types of contraceptives; this could be because of the unavailability of their choices (4).

Slightly more than half of respondents (53.2%) were not using contraceptives, because of the following reasons: they are not aware, they use calendar, believes and other reasons are as summarized in table 7. For those who say they are not aware (unfamiliar) the response was comparable to previous observations by Mwambete and Mogasa (19). For those who are not involved in sexual activities, it is quite true that they do not need any contraceptives. For those who use calendar-based contraception method (traditional methods of contraception), it is quite true that if you use properly, calendar can prevent unwanted pregnancies, but unfortunately most of clients who use calendar ends up in unwanted pregnancies. Calendar-based contraception is unreliable method and most people opt this method simply because of unavailability of reliable methods of contraception (23).

An anecdotal evidence shows that among several ethnic groups/tribes, there is a perception that once a woman uses family planning methods; she is going to be unable to get a pregnancy because it kills ovaries in the fallopian tubes. Moreover, some religions teach their followers that using contraceptives is equal to killing and is ungodly. On the other hand, some women fill proud of giving birth every year or sometimes they are forced by their partners to deliver a child in every year or some people do a competition for bearing children i.e. Coastal Region and Pemba. In our findings reveals that believes and married couples were among the justification for not using contraceptives. This is untrue because even married couples/believers they need contraceptives for spacing of their children and to accelerate progress towards meeting the Millennium Development Goals, which include significant reduction of maternal mortality worldwide by 2015 (4).

Forty one, out of seventy eight respondents, said the reason for preference on particular contraceptives was their easy availability. This is quite true, women/men who know where family planning (contraceptives) services are available, then they are more likely to use them (11,23). A major barrier to contraceptives access is lack of availability (9, 12). However, prevalence of modern contraceptives is higher in countries where access to all methods is uniformly high (13). Condoms and hormonal contraceptives were preferred by respondents because they are easily available compared to other types of contraceptives.

The respondents felt uneasy and were reluctant to use contraceptives due to possible side effects. The birth control pill increases the risk of breast cancer by over 40% if it is taken before a woman delivers her first baby (35). This risk increases by 70% if the Pill is used for four or more years before the woman's first child is born (36). Other side effects that women have experienced include high blood pressure, blood clots, stroke, heart attack, depression, weight gain, and migraines. Diabetics who take oral contraceptives may note increased sugar levels. Some women who stop taking the pill do not have a return of their fertility (menstrual cycles) for a year, or even longer. Although the pill decreases ovarian and some uterine cancers, it increases breast, liver,

and cervical cancer (35). At least three studies have noted that the HIV is transmitted more easily to women who are taking the pill if their partner(s) are HIV/AIDS positive (37-39).

The results of two major world studies have shown that women who take Depo-Provera for two years or more, before age 25 have at least a 5% increased risk of developing breast cancer (40). In addition, Depo-Provera may reduce a woman's bone density, and worsen her cholesterol level. One study found that women who had received injectable progestins (i.e., usually Depo-Provera or norethisterone enanthate) for at least five years suffered a 10% increased risk of developing cervical cancer (41). Several studies have shown that women who receive injectable progestins have a much higher rate of contracting the HIV if their partners are infected, with one study showing a 7% increased risk (42). Norplant, which was developed later than Depo-Provera, has received less scrutiny, but may carry just as high a risk as Depo-Provera. Over 50,000 women have participated in law suits against the manufacturer of Norplant, citing complaints of irregular bleeding, scarring, muscle pain, and headaches (43).

Recently, researchers have demonstrated that condoms do not adequately stop the transmission of the HIV and AIDS. Scrutiny of a condom under electron micrographs (pictures taken with a very powerful microscope) reveals voids (holes) in the condom that are up to 50 times bigger than the HIV particle (44).

Use of all IUDs has been associated with an increased incidence of PID (Pelvic Inflammatory Disease) and of ectopic pregnancy (45). An ectopic pregnancy is one in which the unborn child implants himself/ herself in a location other than in the mother's uterus, usually in the fallopian tube. According to Rossing and Daling, two prominent researchers, women who had used an IUD for three or more years were more than twice as likely to have a tubal pregnancy as women who had never used an IUD. Among these long-term users of an IUD, risk of ectopic pregnancy remained elevated for many years after the device was removed. Ectopic pregnancy remains the leading cause of maternal death in the United States. The IUD may also cause back aches, cramping, dyspareunia (painful intercourse), dysmenorrhea (painful menstrual cycles), and infertility.

Tubal ligation does not always prevent conception. When conception does occur, it is associated with a much higher incidence of ectopic pregnancy (46) which, as was noted,

is the leading cause of death in pregnant women. In addition, women who undergo the procedure may experience complications from the anesthesia or from surgery. Complications include bladder puncture, bleeding, and even cardiac arrest after inflation of the abdomen with carbon dioxide (47). Some women who have undergone a tubal ligation experience a syndrome of intermittent vaginal bleeding associated with severe cramping pain in the lower abdomen (48). Reduced intimacy, lower libido, and a greater risk for hysterectomy often follow tubal ligation; deep regret for having been sterilized is common. Other studies have noted that men who undergo a vasectomy have a higher incidence of developing prostate cancer, especially 15-20 years after their vasectomy, (50-53) although one large study did not find a link (54).

Natural family planning (NFP) is a totally natural method by which couples can manage their fertility. In NFP a woman determines when she is either fertile or infertile by observing the consistency of her cervical mucus. The WHO has performed several large-scale trials that have demonstrated an unintended pregnancy rate of between 0.3 and 3%, which is as good as any artificial form of birth control except sterilization. One very large trial involving about 20,000 Indian women showed an unintended pregnancy rate of less than 0.3% (55). Some obvious benefits of NFP are that it is virtually cost-free and there is no increased risk of cancer.

All the side effects mentioned by respondents as an obstacle to contraceptives usage were correct. According to other studies which were done earlier reveals the same thing that contraceptives have side effects. However contraceptives have many advantages as it prevent unwanted pregnancy, HIV/AIDS, hepatitis and STIs.

Condoms are known to reduce the risk of exposure to the HIV virus during sexual intercourse, leading to decreased transmission of HIV infection. Hence, condom promotion is one of the key strategies adopted by public health programmes aimed at reducing the rate of spread of the HIV epidemic. Consistent condom use has been shown to be highly effective in preventing sexual transmission of HIV/AIDS.

In populations at the highest risk of HIV infection, significant reduction of HIV transmission has been reported even when condoms are used less consistently.

Condoms may also indirectly slow the spread of HIV by preventing the transmission of other STIs that act as co-factors for HIV transmission. Hence, the overall effect of condom use in prevention of HIV transmission may be significantly higher in populations where both STIs and HIV infections are prevalent. As the case in our findings, we found that condoms were available with 40% only, this is an alarming situation and it needs a better resolution. Several studies have reported relatively low condom use in Tanzania (60, 61, 62), suggesting that the ongoing condom promotion efforts have been less successful. Those previous findings are in concordance with our study's findings that contraceptives were not very much accepted by the study participants. However, to date no study has been reported on the availability of condom in a particular district in Tanzania; most of them have documented on how much/many condom were distributed by Government and/or responsible agents in region. For example in 2007, a health survey was conducted in Kigoma region between January to September, which stated that a total of 1,656,000 condoms were distributed in the region. Therefore the number of condoms does not tally with the actual number of condoms needed by the residents of the entire region. This is true bearing in mind that condoms are disposable items. For instance, Kasulu district with about 630,000 inhabitants, a total of 523,721 condoms were distributed in the last six months (2007) and 413,279 were used condoms (59). Such scarcity of condoms is just a reflection of a huge deficit of condoms in the district, which could be even worse in some remote villages.

CHAPTER FIVE

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. CONCLUSIONS

- Availability of modern contraceptives was generally low in all three health facilities, and documentation was generally unsatisfactory especially at Sinza health center.
- Majority of respondents (96.8%) had moderate knowledge of contraceptives however, demonstrated negative attitudes towards contraceptive usage.
- Acceptability of contraceptives was low due to the purported side effects, unawareness of the commodities and/or negative perception like being against their religious belief.
- The selection criteria for procurement of contraceptives were consumers demands oriented.
- Forecasting and Quantification of contraceptives was mainly by consumption based method.
- Procurement of contraceptives was mainly by donation and the products were fundamentally distributed by vehicles.

5.2. RECOMMENDATIONS

- 1) Government and other/responsible agents should raise public awareness on contraceptives usage through a variety of means (television, magazine) and make the product available at all public health facilities.
- 2) Government and institutions engaged in reproductive health should encourage contraceptive usage in reduction of unplanned pregnancies, STIs and HIV infection by providing basic education information about the safety and efficacy of contraceptives.
- 3) Government needs to ensure that condom must be available in large quantity in order to wage an effectively war against HIV, STIs and/ unwanted pregnancies.

CHAPTER SIX

6. REFERENCES

1. Alix Beith, *Decentralizing and Integrating Contraceptive Logistics Systems in Latin America and the Caribbean, With Lessons Learned From Asia and Africa* (Arlington, VA: John Snow, Inc., DELIVER Project, 2006).
2. Pat Shawkey and Carolyn Hart, eds., *Logistics' Contribution to Better Health in Developing Countries: Programs That Deliver* (Arlington, VA: John Snow, Inc., 2003).
3. Management science for health notes on managing drug supply 2010
4. Reproductive health and family planning UNFPA annual reports.2004. Accessed April 15, 2007.
5. Cope J, Yano E, Martin L .Determinant of contraceptive availability at medical facilities in the Department of Veterans Affairs. *Journal of General Internal Medicine*.2006; 21:33-39.
6. Benagiano G, Bastianelli C, Farris M. Contraception today. *Annals of New York Academy of Sciences*.2006; 1092:1-32.
7. Jackson R. Schwarz E, Freedman L. Advance supply of emergency contraception: effect on use and usual contraception-a randomized trial. *Obstetrics and Gynecology*. 2007; 102[1], 8-16.
8. Camp S, Wilkerson D, Raine T. The benefits and risks of the over the counter availability of levonorgestrel emergency contraception. *Contraception*. 2003; 68:309-317.
9. Esprey E, Ogburn T, Howard D. Emergency contraception: pharmacy access in Albuquerque, New Mexico. *Obstetrics and Gynecology*. 2003; 102[5]:918-921.
10. Heise L. Beyond acceptability: reorienting research on contraception choice.2010. Health Development Policy Project. Available at: <http://www.who.int/reproductive-health/publications>. Accessed May 12, 2007.
11. Chen C, Santiso R, Morris L, Impact of accessibility of contraceptives on contraceptive prevalence in Guatemala. *Studies in Family Planning*. 1983; 14[11]:275-283.
12. Kerins M, Maguire E, Fahey D. Emergency contraception. Has over the counter availability reduced attendance at emergency departments? *Emergency Medical Journal*. 2004; 21:67-68.

13. Ross J, Hardee K, Mumford E. Contraceptive method choice in developing countries. *International Family Planning Perspectives*.2001; 28[1]:32-40.
14. Elements of informed choice: Recommendations for updating selected practices in contraceptive use. Report of the cooperating agencies task force. Johns Hopkins University, Baltimore, Maryland, USA, 1989.
15. Vasectomy in Tanzania: Study examines acceptability among men and women. *Family Health Research*: 2008, vol.2, Issue 1.
16. Anabella Sánchez, *Decentralizing and Integrating Contraceptive Logistics Systems in Latin America and the Caribbean: Considerations for Informed Decision Making Throughout the Health Reform Process* (Arlington, VA: John Snow, Inc., DELIVER Project, 2006)
- 16.Vlassoff M, *Assessing Costs and Benefits of Sexual and Reproductive Health Interventions: Occasional Report*, New York: The Alan Guttmacher Institute, 2004, No. 11
17. Countries and Risk” meeting notes, UNFPA reports, and interviews 2005
18. Jain A, Bruce J. Quality: the key to success. *People*. 4:6. 1989.
19. Mwambete KD Mogasa C, knowledge, attitude and acceptability of spermicidal Contraception among university students in Dar es Salaam. *East Africa J. Public Health* 2007 Apr,4(1):23-7.
20. Niruthisard S, Roddy RE, Chutivongse S.The effects of frequent nonoxynol-9 use on the vaginal and cervical mucosa.*Sex Transm Dis* 1991; 18:176-79.
21. Tabet SR, Surawicz, C; Horton S et al.Safety and toxicity of Nonoxynol-9 gel as a rectal microbicide.*Sex Transm Dis* Nov.1999; 26(10):149-154.
22. *Managing drug supply, the selection, procurement, distribution and use of Pharmaceuticals*, Second edition, Management Science for Health in Collaboration with the World Health Organization 2007.
23. Availability and affordability of contraceptive commodities in pharmacies and primary health care facilities in Armenia. Descriptive study report. March 2008,A project NOV.
24. Frost J, Public or private providers? U.S. Women’s use of reproductive health services. *Family Planning Perspectives*.2001:33(1):4-12.
25. Hudgins T, Rao R .Republic of Georgia contraceptive availability assessment: Final Report.JSI Research and Training Institute Inc.Healthy Women in Georgia Program 2004.

26. Schoemaker J. Contraceptive use among poor in Indonesia. *International Family Planning Perspectives*. 2005; 31(3):106-114.
27. Becker J, Dabash R, McGrory E. Paving the path: Preparing for Microbicide Introduction: Report of Qualitative Study in South Africa. EHIPM, University of Cape Town and Population Council 2004. Available at: www.popcouncil.org.
28. Zekeng L, Feldblum PJ, Oliver RM. Barrier contraceptive use and HIV infection among high-risk women in Cameroon. *AIDS* 1993; 7:725-31.
29. Davis KR and Weller SC. The effectiveness of condoms in reducing heterosexual transmission of HIV. *Family Planning Perspectives* 1999; 31(6):272-279.
30. Richters J, Gerofi J, and Donovan B. Why do condoms break or slip off in use: An exploratory study. *Int J STD AIDS* 1995; 6:11-18.
31. Kish-Catalone T, Labib ME, Rando RF. Preclinical Evaluation of Anti-HIV-1 Polybiguanides Vaginal Microbicides in a Murine Model of Toxicity and Inflammation. *Retro-virology* 2005; 2(1):S98.
32. Krebs FC, Miller SR, Catalone BJ. Sodium dodecyl sulfate and C31G as microbicidal alternatives to nonoxynol 9: Comparative sensitivity of primary human vaginal keratinocytes. *Antimicrob Agents Chemother* 2000; 44: 1954-1960.
33. Mayer KH, Karim SA, Kelly C. Safety and tolerability of vaginal PRO 2000 gel in sexually active HIV-uninfected and abstinent HIV-infected woman. *AIDS* 2003; 17:321-329.
34. Mayer KH, Peipert J, Fleming T. Safety and tolerability of BufferGel, a novel vaginal microbicide, in women in the United States. *Clin Infect Dis* 2001; 32:476-482.
35. Kahlenborn C, "Oral Contraceptive Use as a Risk Factor for Premenopausal Breast Cancer: A Meta-analysis" *Mayo Clinic Proceedings*. 2006; 81(10):1290-1302. The study re-enforces the classification of OCs as Type 1 carcinogens by the International Agency for Cancer Research (WHO).
36. Romieu I, Berlin J. Oral contraceptives and breast cancer. Review and meta-Analysis. *Cancer*. 1990; 66: 2253-2263.
37. Allen S. Human immunodeficiency virus infection in urban Rwanda. *JAMA*. 1991; 266: 1657-1663.

38. Simonsen. HIV infection among lower socioeconomic strata prostitutes in Nairobi. *AIDS*. 1990; 139-144.
39. Mati. Contraceptive use and the risk of HIV in Nairobi, Kenya. *Inter. J. of Gyn. and Ob.* 1995; 48: 61-67.
40. Skegg DCG, Noonan EA. Depot medroxyprogesterone acetate and breast cancer [A pooled analysis of the World Health Organization and New Zealand studies]. 1995; *JAMA*: 799-804.
41. Herrero. Injectable contraceptives and risk of invasive cervical cancer: evidence of an association. *Int. J. of Cancer*. 1990; 46: 5-7.
42. Ungchusak. Determinants of HIV infection among female commercial sex workers in northeastern Thailand: Results from a longitudinal study. *J. of Ac. I. Def. Syn. and H. Retro.* 1996. 12: 500-507.
43. Taylor D. Spare the Rod. *The Guardian* (U.K.) March 12, 1996; 11.
44. Rowland CW., *The Washington Post* (letter) June 25, 1992.
45. Ortho Pharmaceutical. Description of Paraguard. *Physician Desk Reference*. 1997: 1936-1939.
46. Gaeta TJ. Atypical ectopic pregnancy. *Am J Emer Med*. 1993; 11: 233-234.
47. Dunn HP, Unexpected Sequellae of Sterilization. *International Review of Natural Family Planning*, 1:4 (Winter, 1977) 318.
48. Townsend DE. Post-ablation-tubal sterilization syndrome. *Obstet Gynecol*. 1993; 82: 422-424.
49. Rosenberg. Vasectomy and the risk of prostate cancer. *American J. of Epidemiology*. 1990; 132: 1051-1055.
50. Giovannucci E. A prospective cohort study of vasectomy and prostate cancer in US men. *JAMA*. 1993; 269: 873-877.
51. Giovannucci E. A retrospective cohort study of vasectomy and prostate cancer in US men. *JAMA*. 1993; 269: 878-882.
52. Hayes RB. Vasectomy and prostate cancer in US Blacks and Whites. *American J. of Epidemiology*. 1993; 137: 263-269.
53. Rosenberg L. Vasectomy and the risk of prostate cancer. *American J. of Epidemiology*. 1990; 132: 1051-1055.
54. John EM. Vasectomy and prostate cancer: results from a multiethnic case-control study. *JNCI*. 1995; 87: 662-669.

55. Ryder RE. "Natural Family Planning": Effective birth control supported by the Catholic Church. *BMJ*. 1993; 307: 723-6.
56. Kippley JF, Kippley SK. *The Art of Natural Family Planning* (Fourth Edition). Couple to Couple League, Cincinnati, USA, p. 245.
57. World Health Organization and United Nations Childrens Fund. Revised 1990 estimate of maternal mortality: a new approach by WHO and UNICEF. April 1996.
58. Robey B, Rutstein SO, Morris L. The reproductive revolution: new survey findings. *Popul Rep* 1992; Series M (11).
59. Bunce A, Guest G, Searing H, Frajzyngier V, Riwa P, Kanama J and Achwal I. Factors Affecting Vasectomy Acceptability in Tanzania. *International Family Planning Perspectives* Volume 33, Number 1, March 2007.
60. Ng'weshemi, J.Z.L., Boerma, J.T., Pool, R. *et al.* Changes in male sexual behavior in response to the AIDS epidemic: evidence from a cohort study in urban Tanzania. *AIDS*. 1996; **10**:1415-1420.
61. Mnyika, K.S., Klepp, K.I., Kvale, G., Nilssen, S., Kissila, P.E. and Ole-King'ori, N. Prevalence of HIV-1 infection in urban, semi-urban and rural areas in Arusha region, Tanzania. *AIDS*. 1994; **8**:1477-1481.
62. Kapiga, S.H. Determinants of multiple sexual partners and condom use among sexually active Tanzanians. *East Afr. Med. J.* 1996; **73**:435-442.

APPENDICES:**3.0 INFORMED CONSENT AGREEMENT (ENGLISH VERSION)****Salutation/invitation**

Good morning/Good afternoon.

My name is

From Muhimbili University of Health and Allied Sciences

You are being invited to take part in a research project, which aims to determine the assessment of acceptability of contraceptives among Kinondoni Residents and their availability in health facilities.

Your decision to take part in the study is voluntary and you may refuse to take part or to stop taking part at any time and you may refuse to answer any question asked.

This study has been given approval from the Directorate of research and publication committee of Muhimbili University of Health and Allied Sciences and permission to do research has been obtained from the Executive Director of Kinondoni Municipal.

Procedure

If you agree to participate, you will be interviewed today. The interviewer will ask you about your demographic characteristics, awareness, knowledge, acceptability and perception towards contraceptives methods. The interview will take about 15 to 30 minutes.

Benefit

The information you provide will help us to bring-out the peoples' awareness on the acceptability of contraceptives methods, and their attitude towards them. Therefore the need for improving public educations on efficient use of contraceptive methods may be considered.

Risk/Discomfort

Some of the questions may be sensitive and personal, so you might feel uncomfortable at the same time we are going to take your time.

Alternative

The only alternative is not to take part in this study.

Study withdrawal

You can stop being a study participant at any time. During the interview, you can stop the interview by asking the interviewer to stop. The interviewer may stop you from being in the study if he or she believes you are unable to answer questions because of tiredness.

Cost/Compensation

This exercise is voluntary, therefore there will be no payment given to the patients. Only incentives will be given for those who will participate.

Confidentiality

All the information you provide will be confidential. Code number will identify the information you provide in research record. We will not use your identity in any report or publication about this research.

Questions

In case you have any question(s) you can ask the principle investigator in this study Ms. Neema Kalison whose phone number is 0754-394226 or Dr Kennedy D. Mwambete 0787-508782 and Prof M. M. Aboud (The Director for Research & Publications); Tel: 022-2152489; Email: drp@muhas.ac.tz.

They will be glad to answer any question at any time.

Acceptance

If you have understood and ready to participate please sign below;

Signature of the respondent/or witness.....

Date.....

4.0: INFORMATION CONSENT (KISWAHILI VERSION)

Fomu ya ridhaa ya kushiriki katika utafiti

Mwaliko

Habari ya asubuhi/ya mchana

Mimi _____ jina _____ langu _____ ni
ninatoka Chuo Kikuu
 cha Afya na tiba na Elimu ya sayansi Muhimbili.

Unakaribishwa kwenye utafiti huu ambao unatafuta kujua uwepo na kukubalika kwa njia za uzazi wa mpango kwa vijana wa wilaya ya kinondoni.

Uamuzi wa kushiriki katika utafiti huu ni hiari na unaweza kukataa kushiriki au kuacha kushiriki wakati wowote. Unaweza pia kukataa kujibu maswali.

Huu utafiti umepitishwa ufanyike na kamati ya bodi ya utafiti ya Chuo Kikuu Cha Afya, tiba na Elimu ya Sayansi cha Muhimbili na ruhusa ya kufanya utafiti imetolewa na Mkurugenzi Mtendaji wa manispaa ya Kinondoni.

Utaratibu

Kama utakubali kushiriki , utaulizwa maswali leo hii.

Msaili atakuuliza maswali kuhusu taarifa binafsi, ufahamu kuhusu uzazi wa mpango, uwepo wake na kukubalika kwake.

Usaili utachukua dakika 30 mpaka 45.

Manufaa

Maelezo utakayotoa yatatusaidia kuelezea jinsi gani watu wana-uewelewa kuhusu njia za uzazi wa mpango zilizopo na namna gani wanakubaliana nazo, hivyo kuangalia

uwezekano wa kuongeza elimu katika jamii na kuboresha matumizi ya njia za uzazi wa mpango.

Kwa hiyo maelezo yako ni muhimu kwa watafiti, waandaa sera, taasisi ya uzazi wa mpango Tanzania, watumishi wa afya na jamii mbalimbali.

Adhari/Adha

Maswali mengine utakayoulizwa yatakuwa nyeti na yanakuhusu wewe binafsi kwa hiyo unaweza kujisikia vibaya, vilevile tutachukua muda wako.

Mbadala

Mbadala wa kushiriki kwenye huu utafiti ni kutokushiriki

Kujitoa kwenye utafiti

Unaweza kujitoa kwenye huu utafiti wakati wowote. Wakati wa usaili unaweza kumwomba msaili kuacha kukuuliza maswali. Msaili anaweza kuacha kuendelea na usaili kama ataona umechoka na huwezi kujibu maswali.

Gharama/malipo

Hili zoezi zima ni la hiari, kwahiyo hakuna malipo yoyote yatakayotolewa.

Usiri

Maelezo yote utakayotoa ni ya siri. Namba ya siri itatumika katika kuweka kumbukumbu ya maelezo utakayotoa. Hatutatumia utambulisho wako tutakapotoa ripoti au kuchapisha matokeo ya utafiti huu.

Maswali

Kama una maswali yoyote unaweza kuwauliza wahusika wa utafiti huu ambao ni Ms. Neema Kalisoni wa namba ya simu 0754- 394226 au Dr. Kennedy Mwambete 0787-508782 na Prof. Aboud (Mkurugenzi wa Utafiti na Uchapishaji/uenezi); Tel: 022-2152489; Email: drp@muhas.ac.tz. Hawa wote ni wa Chuo Kikuu Cha Afya, tiba na Elimu ya sayansi Muhimbili

Kukubali

Kama umeelewa na uko tayari kushiriki katika utafiti huu tafadhari weka sahihi hapo chini.

Sahihi ya anaeulizwa/Shahidi

.....

Tarehe.....

**A: CLIENT'S QUESTIONNAIRE FOR PROSPECTIVE DATA
COLLECTION (Acceptability)**

Questionnaire Number.....

Date

Location

Interviewer code

(Use a tick (✓) or number where applicable)

1, Sex Male

Female

2. Age [number of years]

3. Level of education

• Informal education

• Std seven (primary school)

• Form (iv)

• Form (vi)

• College (specify).

4. Are you still in school?

Yes

No

5. Are you using contraceptive methods?

Yes

No

If No, Have you ever used it before?

Yes

No

[If NO go to question # 10]

If you are using any contraceptive method proceed with question # 6

6. Which contraceptive methods are you using? [Mention them]

.....

7. How old were you when you started using contraceptive methods? [Number of years]

.....

8. Why you are using the contraceptive methods you mentioned above? [Reasons]

.....

11. Do any of your close relatives (husband, wife, children, parents, brother, sister) use a contraceptive method(s)

Yes

No

12. Do you think contraceptive means are effective in preventing?

- a) Malaria
- b) STIs
- c) HIV
- d) TB
- e) Typhoid
- f) Not effective at all
- g) Unwanted pregnancy

13. (a) Have you ever experienced any objection from your partner/wife/husband with regard to usage of contraceptive method?

Yes

No

(b) If yes which ones and why

.....

.....

.....

.....

14. Which of the following BEST describe how contraceptive method prevented unwanted pregnancies or STIs

- a) Physical barrier
- b) Preventive lesion
- c) Disrupt ovaries/fallopian tube
- d) Inhibit sperms formation
- e) Others

(specify).....

15. Are there any side effects [problems] associated with contraceptives usage?

Yes.....

No.....

16. In your opinion, why do you think contraceptives have side effects?

17. Which is/are the side effects associated with contraceptives usage you know or have encountered?

Thank you for filling this form!!!!

B: CHECKLISTS
CHECKLIST FORM (1) FOR RETROSPECTIVE DATA
COLLECTION

(To check the availability of contraceptives in Health facilities)

1. Hormonal Contraceptives (injectables, orals)

Brand name/ Name of the Drug	Manufacturer/ Country	Dosage e.g. 1000mg/6.7ml 500mg/3.3ml etc	Available Stock (Amp, Tabs or Caps)	Quantity (units)	Expired (Y) Unexpired (N)	Time out of Stock (days)

Comments

2. Emergency Contraceptives

Brand name/ Name of the Drug	Manufacturer/ Producer/ Country	Dosage e.g. 1000mg/6.7ml 500mg/3.3ml etc	Available Stock (Amp, Tabs or Caps)	Quantity (units)	Expired (Y) Unexpired (N)	Time out of Stock (days)

Comments

.....

3. Intra uterine devices

Brand name/ Name of the Drug	Manufacturer/ Producer/ Country	Dosage e.g. 1000mg/6.7ml 500mg/3.3ml etc	Available Stock (Amp, Tabs or Caps)	Quantity (units)	Expired (Y) Unexpired (N)	Time out of Stock (days)

Comments

4. Condoms

Brand name/ Name of the Drug	Manufacturer/ Producer/ Country	Dosage e.g. 1000mg/6.7ml 500mg/3.3ml etc	Available stock type (Amp, Tabs or Caps)	Quantity (units)	Expired (Y) Unexpired (N)	Time out of Stock (days)

Comments

5. Vasectomy

Brand name/ Name of the Drug	Manufacturer/ Producer/ Country	Dosage e.g. 1000mg/6.7ml 500mg/3.3ml etc	Available stock type (Amp, Tabs or Caps)	Quantity (units)	Expired (Y) Unexpired (N)	Time out of Stock (days)

Comments

.....

6. Implants/Norplant's

Brand name/ Name of the Drug	Manufacturer/ Producer/ Country	Dosage e.g. 1000mg/6.7ml 500mg/3.3ml etc	Available stock type (Amp, Tabs or Caps)	Quantity (units)	Expired (Y) Unexpired (N)	Time out of Stock (days)

Comments

.....

7. Spermicidal

Brand name/ Name of the Drug	Manufacturer/ Producer/ Country	Dosage e.g. 1000mg/6.7ml 500mg/3.3ml etc	Available stock type (Amp, Tabs or Caps)	Quantity (units)	Expired (Y) Unexpired (N)	Time out of Stock (days)

Comments

**CHECKLIST FORM (2) FOR RETROSPECTIVE DATA
COLLECTION (AVAILABILITY)**

Selection criteria	Forecasting/ Qualification Methods	Procurement methods	Distributions methods
1. Proven efficacy and safety?	1.Consumption-based method	1. Open tender	1.By vehicles/cars
2. Evidence of performance in a variety of settings	2.Morbidity-based method	2.Competitive bidding/competitive negotiation	2.By flight
3.Adequate quality including bioavailability and stability	3.Adjusted consumption method	3.Restricted tender/closed bidder/selective tender	3.By hand
4. Favorable cost benefit ratio in terms of the total treatment cost	4.Service-level extrapolation	4. Direct scale-source contracting	
5.Well known with good pharmaceuticals properties and possibilities for local manufacture		5.Donations	
6. Single compounds		6.Internet procurement	
7. Relevance to the pattern of prevalent disease			
Other specify:			

Comments