KNOWLEDGE AND ADHERENCE VISITS TO PMTCT OPTION B+ SERVICES AMONG HIV POSITIVE PREGNANT WOMEN IN ILALA MUNICIPAL COUNCIL

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By

Ayoub M. Kibao

A Dissertation Submitted in (Partial) Fulfillment of the Requirements for the Degree of Master of Public Health of Muhimbili University of Health and Allied Sciences
October, 2017

CERTIFICATION

The undersigned certify that he has read and hereby recommend for acceptance by Muhimbili University of health and allied sciences dissertation entitled; ***Assessment of the Knowledge and Adherence Visit to PMTCT Option B+ Services among HIV Positive Pregnant Women in Ilala Municipality,*** in (Partial) fulfillment of the requirements for the degree of Master of Public Health of Muhimbili University of Health and Allied Sciences.

Dr. Mughwira A. Mwangu

_____

(Supervisor)

Date_____

DECLARATION

AND

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I, **Ayoub M. Kibao,** declare that this **dissertation** is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature…… Date……

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DEDICATION

This dissertation is dedicated to my beloved Wife who has always been a mentor and has educated me on how to be the best and it is because of this appreciation that I dedicate this work to her. Also to my children, whom I call upon them to follow my footstep in academic arena.

ABSTRACT

Background: In 2013, Tanzania adopted the provision of lifelong antiretroviral therapy (Option B+) to HIV positive pregnant women, throughout the pregnancy and breastfeeding period and continues taking ART for the rest of their lives. However, in 2014, about 38.5% women were lost in adhering to PMTCT option B+ services at national level. More specially, in Ilala municipality, data from district health information system (DHIS2) shows that the rate of lost to follow up on PMTCT option B+ ranges from 36 to 49 percent, which has resulted into high transmission of HIV infection from mother to child. Against this observation a study was initiated to find out the relationship between knowledge and adherence to PMTCT option B+ services.

Objectives: The study was undertaken to assess the quality of knowledge and adherence visit to PMTCT option B+ services among HIV positive pregnant women in selected health centers and hospitals in Ilala Municipality. Specifically it focused on determining quality of knowledge delivered to HIV pregnant women during counseling for PMTCT option B+ services in Ilala Municipality, to determine level of knowledge on services among the HIV positive women, to determine adherence visits to PMTCT option B+ services and to explore socio cultural beliefs affecting adherence to visits to PMTCT option B+ services.

Methodology: A cross sectional study design. The sample of the study was 383 respondents composed of 378 HIV pregnant women and 6 HCPs. The sample was selected purposively. Data collection was done through questionnaire, interview and documentary reviews. Data analysis was done through SPSS and the findings were presented in the form of frequency tables and percentages.

Results: The findings indicated that, 90.8% of the respondents were well informed in area of PMTCT Option B+ services and other related sexually transmitted diseases. The quality of knowledge on PMTCT Option B+ services among HIV positive pregnant women was also very satisfactory 79.9%. On the adherence to PMTCT Option B+ services, 77.7% of the HIV pregnant women were adhering to PMTCT Option B+ service provision. Counseling services

adhering to PMTCT Option B+ services contributed by 93.3%, and was well provided, cutting across various PMTCT and HIV/AIDS issues.

Conclusion: The study concluded that, the possibility of having a healthy child born free of HIV constitutes a strong motivator for attending PMTCT services. Various recommendation were made to address the discrepancies demonstrated in the study in terms of inadequacy of the knowledge, counselling skills, adressing both human resources and health facilities' contuining decentralizing the services so as to be easly accessible to the clients.

Recommendations: The researchers recommends decentralization of PMTCT services to the lower health facilities and increase the number of qualified health care providers providing PMTCT Option B+ services so as to improve services. It is also recommended that the same study in other municipalities and councils on PMTCT Option B+ services to be done in order to get a more representative picture of the problem investigated.

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LIST OF ABBREVIATION AND ACRONYMNS

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
ARV	Antiretroviral
CTC	Care and Treatment Centre
MTCT	Mother to Child Transmission
DCT	Diagnostic Counseling and testing
HIV	Human Immunodeficiency Virus
HCP	Health Care Providers
NGO	Non Governmental Organization
PEPFAR	President's Emergency Plan for AIDS Relief
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission
SSA	Sub Sahara Africa
THMIS-	Tanzania HIV/AIDS and Malaria Indicator Survey
UNAIDS	United Nations Program on HIV/AIDS
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

DEFINITION OF KEY TERMS

Counselor/Nurse: Health care provider who provides care for patients with a minimum qualification of a diploma (registered nurse, nurse midwife or nurse officer).

Prevention of Mother to Child Transmission (PMTCT): are those interventions subjected to HIV positive pregnant women that aim to reduce risk of HIV transmission from an infected mother to her baby during pregnancy, labor, delivery and breast-feeding.

Knowledge: is defined as awareness about something. In this particular study knowledge will defined as having information about and or, understanding of PMTCT option B+ services.

Level of Knowledge: According to Allen Newell 1980s the agent takes actions based on knowledge it possess. In this particular study knowledge level will be measured whether the HIV positive pregnant women is fully informed or not on the PMTCT option B+ services.

Quality is the standard of something against other things of similar kinds. In this study the quality of knowledge is the standard of knowledge delivered by the health provider to HIV mothers on PMTCT option B+ according to guideline.

Adherence to visit in this study means a client attending the PMTCT services as scheduled by health care provider.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background information

According to the United Nations Program on HIV and AIDS (UNAIDS), Human Immunodeficiency Virus (HIV) affected 36.7 million adults and 1.8 million children worldwide at the end of 2016 (UNAIDS 2017). Sub Sahara Africa (SSA) remains severely affected and accounts for 25.5% of people living with HIV globally. In most of SSA countries the prevalence of HIV is estimated to range from 5-15% with Tanzania having an estimated

prevalence of 5.1%. However, HIV prevalence varies by regions and within region, the estimated number of people living with HIV/AIDS in Tanzania by the end of 2016 was 1.4 million (UNAIDS2017).

Globally, more than 17.8 million women of reproductive age living with HIV/AIDS, cconstitutes 51% of all adults living with HIV . It is estimated that, there are more than 330,000 new HIV infected children under the age of 15 years wordwide. These children are infected through vertical model, i.e mother to child transmission and over 56% of these infected women are in SSA.

Vertical transmission of HIV from infected mother to child occurs during pregnancy, labour, delivery or breastfeeding and is commonly called mother to child transmission (MCT). In the absence of any intervention, transmission rates range from 15% to 45%. This rate can be reduced to below 5% with effective interventions during the periods of pregnancy, labour, delivery and breastfeeding. These interventions primarily involve provision HIV testing at ANC and antiretroviral treatment for the mother and a short course of antiretroviral drugs for the baby. The MTCT rate in Tanzania is 9% though with effective PMTCT option B+ program the MTCT rate reduced to 2% (Anna Gamell 2017). They also include measures to prevent HIV acquisition in the pregnant woman and appropriate breastfeeding practices (Gourlay et. al, 2013).

Decline in morbidity and mortality in HIV/AIDS patients coincides with the availability of highly active antiretroviral therapy (HAART). HAART has changed the natural progression of the disease caused by HIV by reducing viral replication, increasing the number of Cluster of Differentiation 4 (CD4) lymphocytes and improving its function, re-establishing the defenses of the host and improving chances of survival in an individual living with HIV/AIDS (Yu et al, 2012; Bello et al, 2011).

The knowledge of pregnant women on PMTCT services is very essential to the successful of PMTCT interventions. HIV infected mothers are at higher risk of transmitting HIV to their babies. The elimination of new HIV infections to the children can be achieved through effective PMTCT program. The World Health Organization (WHO) recommended provision of lifelong Ant retroviral Therapy to all HIV positive pregnant and breastfeeding women regardless of their CD counts. This has been possible by developing evidence based strategies and defining global targets, baselines and indicators that promote the integration of PMTCT into maternal, newborn and child health services, thus strengthening health system (WHO-PMTCT Guideline, 2013).

1.2 Trend to Option B+ in Tanzania

In most SSA countries PMTCT treatment guidelines was developed from 2000 which recommended ARV to be given as a prophylaxis starting late in pregnancy or during labour and delivery. A single-dose nevirapine (NVP) was a drug of choice for mothers and infants at this stage (Option A). However, in 2010 ammendment of the guideline was done aimed to protect pregnant women with CD4 count less than 200 cells/mm3. Azidothymidine (AZT) was given starting from 28 weeks of pregnant followed by single dose niverapine during labour and delivery and the infants were given NVP as prophylasis for a week (Option B).

The provision of lifelong antiretroviral therapy (Option B+) is a new treatment regimen that was adopted by Tanzania in March 2013, whereby all pregnant and or breastfeeding women who test HIV positive are initiated on anti-retroviral therapy (ART) throughout the pregnancy and breastfeeding period and continue taking ART for the rest of their lives. Previous regimens required that the pregnant or breastfeeding woman undergo CD4 cell count and

when their CD4 was found to be less than 500ml/l that is when they would be started on ART. Option B+ does not require CD4 to be done before ART initiation (WHO PMTCT Guidelines, 2014).

Under supermarket approach both Antenatal and PMTCT services are provided at RCH clinic under one roof where pregnant women attending antenatal clinic have a chance to be counseled and get tested for HIV. For those whose results become positive they are initiated ART on the same day without any delay. HIV testing can also be done at labour ward and post natal clinic for those who missed HIV testing during ANC visits. The aim is to reduce all possible HIV infection which may occur during labor and delivery.

1.3 Problem Statement

A pregnant woman who adhered to ART has a minimal chance of transferring infections to another person due to a reduced viral load. However this depends on the HIV stage of the individual patient. On the other hand pregnant women who are not on ART have a high chance of causing cross infection. A long-term adherence to ART among HIV positive pregnant women is still a challenge in low-income settings such as Tanzania. In Tanzania about 38.5% women are lost after initiation of PMTCT option B+ services (Ngarina et al, 2014). Due to high rate of lost to follow up among pregnant women who are on PMTCT option B+ services, there is a need to assess the quality of knowledge delivered during counseling and follow-up visits.

Trends of data from district health information system (DHIS2) at different health facilities in Ilala Municipality shows that the rate of lost to follow up among pregnant women on PMTCT option B+ ranges from 36 to 49 percent. This may result into high transmission of HIV infection from mother to child, ART resistance and treatment failure and high morbidity and mortality due to HIV/AIDS. There is a need to find out the level of knowledge on PMTCT option B+ among HIV infected pregnant women so as to reduce the proportion of lost to follow up among these clients (DHIS2, 2016).

Despite other several factors, non-adherence visits to PMTCT option B+ services among pregnant women has been contributed to limited knowledge during counseling and before initiation of ART(Annabelle 2015). Although some studies showed a positive relationship between knowledge and adherence to PMTCT option B+ services, there is little evidence on knowledge and utilization of PMTCT services in Ilala Municipality (Tsegaye et al, 2016). Therefore this study aimed to further explore the influence of knowledge provided to by health care providers (HCPs) to HIV positive pregnant women on adherence to visits of PMTCT option B+ services attending for care and treatment.

1.4 Rationale of study

PMTCT options B+ has been available in Tanzania since 2013 and is currently available at all levels of health care facilities throughout the country and are provided for free through the support of the United Stated President's Emergency Plan for AIDS Relief (PEPFAR). Initiation of Highly Active Antiretroviral Therapy (HAART) to HIV infected pregnant women and children will help to reduce viral load and increases CD4 counts. Adherence to antiretroviral therapy (ART) among HIV infected pregnant women will also help to reduce mother to child transmission and mortality and mortality to these groups (Violary et. al; 2008).

PMTCT options B+ offers important programmatic and operational advantages which could accelerate progress towards eliminating new paediatric infections. WHO programmatic update also emphasizes that Option B+ in particular may have significant additional advantages beyond PMTCT. These include providing better protection for maternal health and greater reduction in the sexual transmission of HIV than other options.

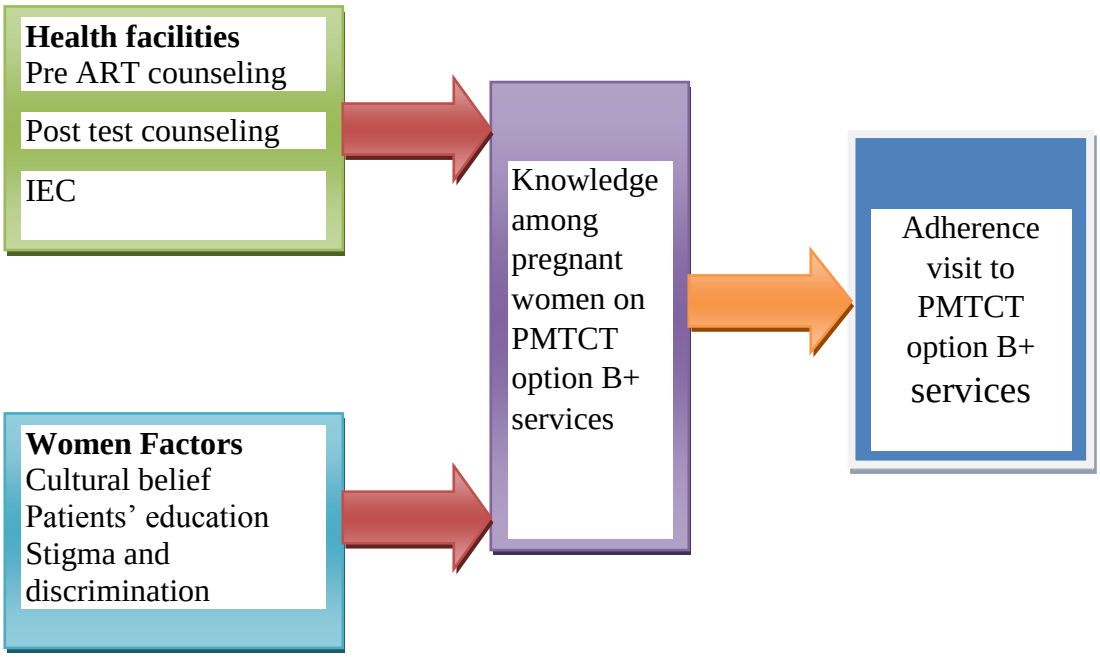
PMTCT option B+ is a cost effective strategy and gate way to most of HIV related services including timely provision of antiretroviral drugs. Identifying the gap of knowledge and utilization of option B+ among HIV infected pregnant women will help to find out the solution on the existing gaps aiming to reduce number of clients who are lost to follow up during the services by acquiring a complete package of knowledge on PMTCT.

Therefore the findings of this study will give an understanding in terms of knowledge and adherence to visits on PMTCT option B+ among HIV infected women to improve retention of infected pregnant women into care and treatment. The knowledge from this study would add value and assist in the review of health education and counseling strategies on PMTCT services in the local area and the country at large.

1.5 Conceptual Framework

Figure 1below presents the Conceptual frame work of the study showing the linkage between health facility and patient's factors towards improving women's knowledge on HIV disease and adherence to visits on PMTCT Option B+ services.

Figure 1: Conceptual Frame Work



Source: Researcher; 2017

The conceptual framework as presented above shows pregnant women's adherence to visits on PMTCT Option B+ services is determined by three factors which are health facility factors, women factors and the knowledge of pregnant women on PMTCT option B+ services. Health facility factors includes provision of education materials and counseling to the pregnant women for instance pre-test and post-test counseling for HIV and adherence counseling to ART and clinic visits. Women factors refers to cultural beliefs, pregnant women's education and, stigma and discrimination that may affect the knowledge provided by health care provider and lastly not adhering to the clinic visits.

1.6 Research Questions

1. What is the quality of knowledge delivered to HIV pregnant women during counseling for PMTCT option B+ services in Ilala Municipality?
2. What is the level of knowledge on PMTCT option B+ services among HIV positive pregnant women?
3. What are adherence visits to PMTCT option B+ services among HIV positive pregnant women?
4. What are the socio cultural beliefs affecting adherence to visits to PMTCT option B+ services among HIV positive pregnant women?

1.7 Research Objectives

1.7.1 Broad Objective

To assess the quality of knowledge and adherence visit to PMTCT option B+ services among HIV positive pregnant women in Ilala Municipality.

1.7.2 Specific Objectives

1. To determine quality of knowledge delivered to HIV pregnant women during counseling for PMTCT option B+ services in Ilala Municipality
2. To determine level of knowledge on PMTCT option B+ services among HIV positive pregnant women in Ilala Municipality
3. To determine adherence visits to PMTCT option B+ services among HIV positive pregnant women in Ilala Municipality
4. To explore socio cultural beliefs affecting adherence to visits to PMTCT option B+ services among HIV positive pregnant women

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Overview of Prevention of Mother to Child Transmission

Mother to child transmission (MTCT) of HIV refers to the transmission of HIV infection from HIV infected mothers to their infants. MTCT can occur during pregnancy, labour and delivery, and breastfeeding. Without intervention, the overall risk of MTCT is approximately 20% to 45%. Lifelong ART is recommended for all HIV-positive pregnant and breastfeeding women regardless of their CD4 count or WHO clinical stage or gestational age. Efforts towards elimination of Mother to Child Transmission of HIV globally became very promising in ending transmission of HIV from mother to her baby (WHO PMTCT guideline, 2013).

Studies have shown women initiated ART under Option B+ program, 17% of them lost to follow within six months after ART initiation and were five times more compared to women initiated ART for their own health. More than one-third of all pregnant on Option B+ initiated ART on the day of diagnosis, were almost twice as likely never to return to the facilities after the initial visit as pregnant on Option B+ who started later. The risk of lost to follow up was highest in facilities with large number of patients in option B+ (Tenthani et. al, 2014)

2.2 Knowledge on PMTCT Option B+

A study done in Uganda shows that there was a high gap of knowledge given to the clients by health care provider during counseling process (Larsson et al. 2012). This has contributed to few clients involved in counseling and testing for HIV. In Northern part of Tanzania, a study by Falnes et al (2010) documented that 64.8% of pregnant mothers have knowledge on PMTCT program in urban areas compared to the rural, although poor quality of counseling among both pregnant and breast feeding mothers has been contributed by heavy workloads of nurse counselors in RCH clinics. Therefore the knowledge given to pregnant women during counseling were incomplete according to the PMTCT option B+ guidelines.

In Malawi, Hardon et, al (2012) reported low knowledge about PMTCT option B+ among pregnant women have a great impact in retention of clients into care and treatments. However,

out of those who default from care and treatments, majority of the women (18 – 32%) do not ascertain their HIV status prior to delivery due to lack of knowledge on PMTCT option B+ (Rosenberg et, al. 2015).

2.3 Patient Factors

Patients factors are among major contributors to the lost to follow up in women on lifelong antiretroviral drugs which may include limited knowledge on Antiretroviral drugs, lack of support, stigma, disclosure issues, attitudes and perceptions towards the drugs, non-acceptance of status and local belief. Women who lack support from their partners are at high risk of defaulting treatment. Spousal support can be seen through the active involvement of the male partner in his female partners' treatment, for example accompanying them to the clinic, providing money for transport, reminding them to take the medicine, agreeing to test for HIV themselves and also agreeing to safer sex practices. Many women find it difficult to disclose their HIV status after testing positive because they fear to be blamed or to be divorced out of the home by their male partners (Mapuranga et, al. 2015; Bell et, al. 2007).

Women understand the benefits of lifelong antiretroviral drugs, yet still are faced with the challenge of how to commit themselves with the fact of lifelong commitment of ART. Women reported facing difficulties to adhere to initiating ART on the same day as learning their HIV status. First they wanted to discuss with their husbands, receive a CD4 count and receive an HIV test at another facility to confirm their HIV status. Some of health workers also reported concerns that lost to follow up among women using antiretroviral drugs may result as women are not receiving adequate information (Katirayi et. al, 2016). This was evidently shown in a study done in Malawi where it was found that facilities that offered additional adherence counseling beyond the required national guidelines had lowered lost to follow up among women using antiretroviral drugs (Tenthani et. al, 2014).

HIV related stigma plays a very important role in ART care and determines a patient's ability to be retained in care and treatment. In a study done at Malawi, mothers thought that when a mother comes to book her pregnancy, she is not adequately prepared for HIV testing and more

so for a positive result in one day. They also did not consider ART to be beneficial to them as mothers and felt they were not ready for ART as they were still well (Sellier et al, 2006). Some women have some myths and misconceptions about HIV treatment and these can make them stop taking their drugs. Some patients who have experienced or heard of the side effects of the ART drugs have opted to stop medication to prevent them from side effects (Musheke et, al. 2013).

2.4 Health Service Factors

Pregnant women become frustrated when they are delayed at the Reproductive and Child Health (RCH) clinic since women have many tasks at home including care of children (Nash et, al. 2011). Long waiting time due to shortage of staff and space for provision of counseling/ and lack of transport fare are among the reasons of lost to follow up among women on lifelong antiretroviral drugs within PMTCT program (Nieuwkerk e,t al. 2006). A study in Malawi by Tweya et. al (2014) identified some other reasons for low utilization of PMTCT services which includes patients unable to attend her clinic visit due to becoming very sick to travel to clinic and "limited understanding of the initial ART education session" and low knowledge on PMTCT knowledge.

2.5 Socio-Cultural Factors

The study done in Malawi and Nigeria shows socio-cultural factors as the biggest barriers to the success of PMTCT services. In this study several challenges were identified that prevented the successful implementation of PMTCT services in their countries among them stigma and discrimination were the most important barrier faced in PMTCT services. Other socio-cultural factors that identified were religious belief, family disruption, gender inequality and perception (James C. Okoli et. al 2014). This was also seen in the study in Eastern Nigerian study done at Ante natal clinic where social-cultural norms were found to limit women rights to make important decisions on their own health. It was noted that the reproductive health actions of women often were decided by their male partners (Okonkwo K. C et. al 2008.)

CHAPTER THREE

3.0 METHODOLOGY

3.1 Study Design

This was a cross sectional hospital based survey to assess knowledge and adherence to visits on PMTCT Option B+ services among HIV positives pregnant women in Ilala Municipal council. Both quantitative and qualitative methods were used to collect data from the selected health facilities with PMTCT clinics.

3.2 Study Area

The research was carried out in Ilala Municipal Council which is one of five councils in Dar es Salaam city. Based on the 2012 Tanzania Population and Housing Census, Ilala district has 1,220,611 inhabitants, of whom 373,998 are women between the ages 18-70 years.

The district has a total of 221 health facilities including public and private. Out of these facilities, 72 public and private health facilities provides RCH services including PMTCT option B+ services. Of the 72 facilities, 8 are hospitals, 22 are health centers and 42 are dispensaries.

Dar es Salam have an adult HIV prevalence of 4% (THMIS, 2012) and HIV prevalence among women attending ANC clinic is 7% (ANC Surveillance report, 2008). In Ilala Municipal council, the prevalence of HIV among women attending ANC clinic is 6.9% (NACP report, 2013). Due to high HIV prevalence among pregnant women, there is a need to intervene so as to reduce mother to child transmission rate.

3.3 Study Population

The study population included HIV infected pregnant women of reproductive age who are receiving PMTCT option B+ services from PMTCT clinics and health care providers/counselors in the selected PMTCT clinics.

3.4 Sampling and Sample Size

All study participants who satisfied the inclusion criteria were recruited for the study by convenient sampling. The minimum sample for the quantitative part was calculated based on the formula below.

3.4.1 Sample Size Estimation

3.4.2 Quantitative Sample Size

$$n = \frac{z^2 p (1-p)}{\varepsilon^2}$$

- Z= which correspond to 1.96 (at 95% CI)
- n= Expected minimum sample size
- P= 64.8% Proportion of pregnant women with knowledge on PMTCT option B+ services in Northern Tanzania (Falnes at al; 2010)
- ε= Margin of error; 5%
- Therefore, the minimum estimated sample size for this study was 383 pregnant women after adding 10% of non respondents.

3.4.3 Qualitative Sample Size

For the qualitative part the study subjects were nurses/counselors found in the selected PMTCT clinics during the day of interviews were enrolled to participate in this study. In-depth interview and observation methods were used for data collection.

3.5 Sampling Procedure

Ilala Municipal council has a total of 72 health facilities which provides reproductive and child health services. Almost all RCH clinics provide PMTCT option B+ services for HIV infected pregnant women. Purposively, based on the estimated sample size, 6 clinics with PMTCT option B+ were selected by simple random technique for conducting this study. This included 2 hospitals, 2 health centers and 2 dispensaries from public health facilities. Equal number of

study participants from selected health facilities were selected by systematic random sampling of every 2nd woman exited the clinic was selected in the study until the desired sample reached from each facility to the required sample size.

3.6 Inclusion Criteria

HIV positive pregnant women on PMTCT Option B+ program attending antenatal care in six Government health institutions and Nurse Counselors at Ilala Municipality.

3.7 Exclusion Criteria

Those participants who are unable to communicate for example deaf were excluded from the study.

3.8 Data Collection Methods

Questionnaires and in-depth interview schedules were used as data collection tools. A standard questionnaire had three sections to cover the aim of this study. The first part of the questionnaire collected demographic information like age, marital status, education level etc. The second part explored knowledge of PMTCT option B+ among the participants and the third part included questions on utilization of PMTCT option B+ among HIV positive pregnant women.

In-depth interview and observation was used to explore views of health care providers or counselors on the quality of knowledge delivered to these clients during their visits. Use of checklist derived from PMTCT guideline on the package of counseling was used to assess the quality of knowledge delivered to pregnant women by counselors. The discrepancies were identified based on the PMTCT guideline. This was done by the use of checklist derived from PMTCT guideline.

Data were collected by principal investigator and research assistant who was trained for two days. Experienced research assistants including counselors were considered for this study, the training involved updating their knowledge on PMTCT option B+, orienting them with the questionnaire and checklist which was used for data collection. Data collected were audited daily by the principal investigator to ensure data quality.

3.9 Data Analysis Plan

Data from the questionnaire were entered in a computer Microsoft access database, all source documents were kept confidential and secured. Verification was done by double entry using two different clerks. Data were transferred to SPSS for statistical analysis. Data were analyzed for frequencies, mean, percentages and Chi-squared test. A p-value of < 0.05 was considered significant in all statistical analysis and some results were compared with results of other studies.

Thematic analysis was used for qualitative data. The analysis begun with identifying themes from the collected raw data, this stage is also known as open coding. During this stage, the researcher identified and tentatively names the conceptual categories into groups. Words, phrases or events that appear to be similar were grouped into the same category. These categories may be gradually modified or replaced during the subsequent stages of analysis. The next stage the re-examination of the identified categories to determine how they are linked together in order to have a big picture, the researcher then translated the conceptual model into the story line that would be read by others.

3.10 Validity and Reliability

A pre-test was conducted to assess the validity and reliability of the research data collection tools. Content and validity was used to determine the relevance and representativeness of the tools. The question(s) and themes were properly coded to ensure consistency and clarity. Researcher was always available to provide clarity to respondents if required. This also helped to reduce researcher bias. A combination of all these measure ultimately ensured trustworthiness of the data that were collected.

3.11 Scoring Criteria to Assess Knowledge of Pregnant Women on PMTCT option B+

A structured questionnaire was used to assess knowledge and adherence visits to PMTCT option B+ services. The questions covered the quality and level of knowledge to PMTCT option B+ services. The knowledge about PMTCT was measured by 7 questions from the study participants responses, questions were of multiple choices with four to five options and close ended questions with "YES" and "NO" option. The correct answer had to score "1" and incorrect answer would be scored "0". A total knowledge score was constructed by summing all the scores of knowledge questions. Individual who score above the mean was categorized as knowledgeable while those who score below the mean value was categorized as having inadequate knowledge on PMTCT option B+.

3.12 Pre-testing of Data Collection Tools

Pre-testing of questionnaire was done in Kinondoni municipal council at Magomeni health centre before the commencement of the study where the study did not be conducted. Total of 10 participants and one healthcare provider were involved in the pre testing of the research questionnaires. Participants were asked about the areas which they did not well understand and needed further explanation. Modifications of the questionnaire and checklists were done basing on issues that were raised during pre-test.

3.13 Ethical Consideration

Ethical clearance was obtained from the University's Research Ethical Committee after reviewing this proposal. Thereafter, official permission to conduct research was sorted from Ilala Municipal Medical Officer of Health (MMoH). The participants was informed about the study and asked their consent to participate. Each questionnaire was attached with consent form for a respondent to sign if he /she agree to participate in the study. Participants were free to withdraw from study even if they have signed a consent form and respect for those who refused to participate in this study were continuing with their routine services**.**

To ensure confidentiality, the study participants were not asked their names during interviews and also not including them in study questionnaire except for the consent forms. Consent forms were kept separately from questionnaires to avoid linking them with other materials. All study questionnaires and consent forms were kept and locked in a cupboard during and after the study.

3.14 Dissemination of Findings

The research findings will be presented to Muhimbili University of Health and Allied Sciences, Municipal Medical Officer including health facility officer in-charges of the respective health facilities in Ilala Municipal for the purpose of being utilized to improve reproductive and child health services. The results will also be presented in national conferences and possibly published in scientific journals.

CHAPTER FOUR

4.0 RESEARCH FINDINGS

4.1 Introduction

This chapter presents the data analysis of the study which was done to make an assessment on the quality of knowledge and adherence visit to PMTCT Option B+ services among HIV positive pregnant women in Ilala Municipality, in Dar es Salaam. The study was guided by four specific objectives. These were to determine quality of knowledge delivered to HIV pregnant women during counseling for PMTCT Option B+ services in Ilala Municipality, to determine level of knowledge on PMTCT Option B+ services among HIV positive pregnant women in Ilala Municipality, to determine adherence visits to PMTCT option B+ services among HIV positive pregnant women in Ilala Municipality and to explore socio cultural beliefs affecting adherence to visits to PMTCT Option B+ services among HIV positive pregnant women. The findings presented below are in the form of tables illustrating general profile, demographics and respondent characteristics as well as associations between variables. The discussion portrays a scientific analysis of the study results in relation to the PMTCT knowledge and adherence to visit to PMTCT services.

4.2 General Profile of the Respondents

A standard questionnaire was administered to 383 respondents who were HIV positive women and health care providers (HCPs) (338 HIV positive pregnant women taking Option B+ and 6 HCPs) selected from six health care institutions in Ilala municipality. The health care institutions were Mnazi Mmmoja, Tabata A, Buguruni, Chanika, Amana and Vingunguti. Data from the field indicated that, among the respondents planned to be included in the study, the research managed to cover 62(18.3%) from Mnazi Mmoja, 61(18%) from Tabata A, 62(18.3%) from Chanika, 26(7.7%) from Amana hospital, 62(18.3) from Buguruni and 64.18.7%) from Vingunguti health centre, as presented on table 4.1 below.

Table 4.1: General Profile of the Respondents Facility

Facility Name	Frequency	Percent
Amana Hosptal	48	13.3
Manazimmoja Hospital	62	17.2
Buguruni Health Centre	63	17.5
Chanika Health Centre	62	17.2
Tabata A Dispensary	61	16.9
Vingunguti Dispensary	64	17.8
TOTAL	360	100

Source; Research, 2017

4.3 Socio-Demographic characteristics

The study examined respondents in terms of age, in which it was observed that, majority of participants134 (37.2%) were between 25 to 30 years old, 74(20.5%) of them were of the age between 15 and 24, 87(24.1%) had years between 31 and 35, while 639(17.2%) were having the age between 36 and 45 and 3(0.8%) were 46 years and above. The marital status of the respondents was also a concern for this research so as to be related with its influence positively or negatively with the utilization of PMTCT Option B+ services.

Moreover, the majority of study participants 240(66.6%) were married, 78(21.6%) of the respondents were separated/divorced and 42(11.6%) were not married. The education level of respondents was considered important in contributing towards the adherence to visit to PMTCT Option B+ services. Findings from the study revealed about 7(1.94%) respondents never attended any school or other formal type of education, 214(59.4%) respondents have attended primary school education, 121(33.61%) respondents have attended secondary school education, 18(5%) have attained University education.

Furthermore, the study also intended to know occupation of respondents basing on the fact that, type of occupation has an impact on the level of income at individual and family level and its subsequent impact on the uptake of PMCT Option B+ services. Majority of participants 195(54.1%) were self employed, 56(15.5%) of respondents had formal type of employment and 109(30.2%) were neither having formal employment nor self employment. Concerning the number of current pregnancy among the respondents. The findings indicated that, about 353 (98.05%) of the respondents the current pregnancy were between 1 and 5^{th} pregnancy, while 7(1.95%) respondents were in their 5^{th} and above pregnancy as shown by table below.

Table 4.2: Socio-Demographic Characteristic of participants

Variables	**Frequency**	**Percentage**
Age in years		
15 – 24	74	20.5
25 – 30	134	37.2
31 – 35	87	24.1
36 - 45	62	17.2
46+	3	0.8
TOTAL	360	100
Marital Status		
Married	240	66.6
Divorce	78	21.6
Not married	42	42
Education Level		
Primary	214	59.4
Secondary	121	33.6
University	18	5
Not educated	7	1.9
Source of income		
Employed	56	15.5
Self employment	195	54.1
No job	109	30.2
No. current pregnancy		
1 – 5	353	98
6 and above	7	1.9

Source; Research, 2017

4.4 Level of Knowledge on HIV and PMTCT

PMTCT services were a result of the transmission of HIV in which to a large percentage is transmitted through sexual intercourse, the respondents' knowledge on STIs was inquired by the researcher. In this study, majority of participants 320(88.9) of the respondents had adequate knowledge and awareness on STIs, while 40(11.1%) of the respondents were not knowledgeable as far as STIs is concerned. Furthermore, about 218(60.5%) of the respondents were aware of the PMTCT Option B+, while 142(39.4%) of the respondents were not aware of PMTCT Option B+. Moreover, In this study about 69(22.7%) of respondents mentioned sexual intercourse as one among factors that HIV can be transmitted from one person to another. Other methods of transmission mentioned by the respondents were Mother-to-child transmission (MTCT) 14(4.61%), blood transfusions 21(6.91%) and sharing sharp instruments/needles 198(65.13%). About 2(0.66%) of the respondents were not aware of the ways in which HIV/AIDS are acquired.

MTCT can occur during (pregnancy, delivery and breastfeeding period), participants asked when they were provided with counseling before undertake HIV testing. The findings indicated that, about 327(98.0%) of the respondents said that, they were provided with those information, while 33(9.1%) such key information were not shared to them when they went for HIV testing.

The feeding options have been adapted by the country from WHO in collaboration with other partners in PMTCT Option B+ services, and are provided with the guidelines. Consequently, data indicated that, 330(91.6%) of the respondents said that they managed to receive those information once enrolled in PMTCT Option B+ programs, while 30(8.3%) of the respondents were not provided with such knowledge.

Moreover, majority 242(67.2%) of the respondents said that, their partners were aware of their HIV status, while 118(32.8%) of the HIV positive pregnant women who participated in the study, responded that, their partners were not aware of their HIV status as indicated on table below.

Table 4.3: Level of knowledge on HIV and PMTCT

Variables	Frequency	Percent
Understanding STI diseases		
1.Yes	320	88.89
2. No	40	11.11
Awareness of PMTCT		
1.Yes	218	60.56
2. No	142	39.44
Knowledge on MTCT(Three key ways)		
1 Yes	327	90.83
2 No	33	9.17
Knowledge on infant feeding		
1 Yes	330	91.67
2 No	30	8.33
Awareness on partners HIV status		
1 Yes	242	67.22
2 No	118	32.78

Source; Research, 2017

4.5 Attendance to PMTCT Option B+ Clinic as Scheduled

Full attendance of the respondents to PMTCT Option B+ service clinics as prescribed by the HCPs is one of the central areas towards effectiveness of the program. Pregnant mothers with HIV should be attending PMTCT clinic at ANC monthly for receiving standard RCH package and HIV services. WHO clinical staging is assesses at initial visit and at every visit. For those on ART adherence is assessed at all visits and HIV Viral load is checked at 6, 12 month after initiation of ART and later annually (PMTCT guideline 2013).

In this regard the respondents' adherence to the clinic was also assessed during the research. Findings indicated that, about 280(77.7%) of the respondents were attending the PMTCT Option B+ Clinic as scheduled, while 80(22%) did not manage to make it as per schedule.
In regards to this study majority 188(52%) missed their clinic visit to PMTCT Option B+ services within the past 3months while 172(47%) did not pmiss their clinic visits in that period. Among those missed clinic visits to PMTCT option B+ services results have indicated that about 60(31.9%) mentioned lack of fare, 44(23.4%) mentioned on safari, 35(18.6%) claimed to be living in remote areas or long distance to the PMTCT clinics, 7(3.7%) mentioned fear stigma and 8(4.2%) were other reasons. The results indicated that, 109(30.2) used a number of minutes (less than one hour) in obtaining the PMTCT Option B+ services while 251(69.7%) of respondents spents hours (more than one hour) during waiting of PMTCT Option B+ the service in health facilities.

It was also observed that 84 (23.3%) of the respondents perceived the time spent is too much in receiving PMTCT Option B+ services, while 253(70.2%) perceived the time spent on accessing PMTCT Option B+ services as just right (reasonable) and 23(6.3%) perceived time as too short . The findings are summarized on table below.

Table 4.4: Attendance to PMTCT Option B+ Clinic as Scheduled

Variables	Frequency	Percent
Attendance to clinic as per schedule 1. Yes 2. No	 280 80	 77.78 22.22
Missed any clinic visit in past 3 months 1. Yes 2. No	 188 172	 52.22 47.78
Reasons for missing 1. Lack of fare 2. Long distance to clinic 3. Long waiting time 4. On safari 5. Fear of stigma 6. Others	 60 35 34 44 7 8	 31.91 18.62 18.09 23.4 3.72 4.26
Time spent 1. Minutes 2. Hours	 109 251	 30.28 69.72

4.6 The Contribution of Counseling on PMTCT Option B+ Services in Ilala Municipality

The study through different approaches of questions sought to find how the counselling for PMTCT care was done, and the extent in which it has impacted the provision of PMTCT OptionB+ services in the municipality. The findings are as presented below.

4.6.1 Provision of PMTCT Option B+ Counseling during Visits

Since the respondents who are HIV positive pregnant women do visits regularly the health centers and hospitals for PMTCT Option B+ services, they were asked if they are always provided with counseling on the program by the HCPs. Findings indicated that, about 336(93.3%) responded positively being provided with the counseling services on their regular visits, while 23 (6.3%) said that were not provided with the services. Moreover, the PMTCT Option B+ plus counseling was provided in two methods, according to the research findings

group counseling is the major method used by healthcare providers that accounts for 186(51.6%) and one-to-one counseling 174(48.3%).

4.7 Chi-Square Analysis and Cross Tabulation

This section presents the results on the statistical tests which were done to establish the relationship between the selected independent and dependent variables. The statistical tests which were used were chi-square and cross tabulations. The variables which were tested were knowledge on and the ways of the transmission of STs, Level of education and transmission of STs, times spent on PMTCT Option B+ services and the attendance to the clinics and reasons for not attending PMTCT Option B+ services in Ilala municipality. The findings are presented below.

Table 4.5: Respondents' missing clinic visits for PMTCT Option B+ for the past three months and Reasons for missing

Missed any clinic visits for PMTCT care in the past 3 months?	Reasons for missing						p value
	Lack of Fare	Long distance	Long waiting time	On safari	Fear of stigma	Others	
Yes	58(30.8%)	34(18.0%)	33(17.5%)	43(22.8%)	6(3.1%)	7(3.7%)	0.5053
No	2(1.0%)	1(0.5%)	1(0.5%)	1(0.5%)	1(0.5%)	1(0.5%)	

The P- value in table above is (0.5053). Since the p-value is greater than alpha value of 0.05; therefore the results is not significant. This bring the implication that, there is no relationship between missing PMTCT Option B+ services and the reasons behind it such as lack of fare, long distance and long waiting time, patient on safari and fear of stigma.

Table 4.6: Knowledge on Sexually Transmitted Diseases and ways in which one acquire HIV/AIDS-(Cross Tabulation)

	Ways one can acquire HIV/AIDS					
Knowledge on Transmitted diseases?	Sexual intercourse	Mother-to-child transmission	Blood transfusions	Sharing body cutting instruments	Don't know	p value
YES	59(19.4%)	14(4.61%)	20(6.5%)	193(63.4%)	2(0.66%)	0.0035
NO	10(3.2%)	0	1(0.3%)	5(1.6%)	0	

The P- value in table 4.6 above is 0.0035, since the P-value is smaller than value of 0.05, therefore, it can be concluded that the result is very significant. This implies that there is a relationship between knowledge of sexually transmitted diseases and understanding ways of acquire HIV/AIDS. In other words there is a significant relationship between knowledge on STIs and the ways in which HIV is transmitted.

Table 4.7: Level of Education and ways in which HIV/AIDS is acquired-Cross tabulation

Level of Education	Ways one can acquire HIV/AIDS					
	Sexual intercourse	Mother-to-child transmission	Blood transfusions	Sharing body cutting instruments	Don't know	p value
Primary	34(11.1%)	10(3.2%)	15(4.9%)	120(39.4%)	1(0.3%)	0.1181
Secondary	27(8.8%)	4(1.3%)	5(1.6%)	73(24.0%)	1(0.3%)	
University	5(1.6%)	0	0	5(1.6%)	10(3.2%)	
Never been to school	3(0.9%)	0	1(0.3%)	0	4(1.3%)	

As presented on table 4.7 above, it can be observed that, the P- value in table above is (0.1181), since the P-value is greater than alpha value of 0.05, therefore, the result is not significant, in the sense that, there is no relationship between level of education and knowledge on the ways of acquiring HIV/AIDS as presented above.

Table 4.8: Attendance to PMTCT Option B+ Services and the Time Spent on the Attendance to the services-Cross Tabulation.

Do you come regularly to clinic	Opinion on the amount spent at the clinic			p value
	Too much	Just right	Too short	
Yes	56(15.5.6%)	209(58%)	15(4.17)	0.0032
No	28(7.78%)	44(12.22%)	8(2.22%)	

The P- value as presented on table 4.8 (0.0032). Since the P-value is less than alpha value of 0.05, it can be concluded that the result is significant. This implies that there is relationship between regular visiting PMTCT Option+ services waiting time in accessing the services.

4.8 Qualitative study Findings

Respondents Characteristics

Six In-depth interviews were conducted to six health care providers from Amana and Mnazimmoja hospitals, Chanika and Buguruni Health Centres, Vingunguti and Tabata "A" dispensaries. Two (2) registered nurses and 4 enrolled nurses working at PMTCT clinic within Ilala Municipal council were interviewed. All of them attended training on PMTCT Option B+ services organized by Tanzania Ministry of Health and an NGO known as Management and Development for Health (MDH).

Awareness of PMTCT services

Health care providers were asked about pregnant women's knowledge on PMTCT. Through observation using a checklist, it was observed that pregnant women were provided with information on PMTCT during counseling. However on further probing on HIV positive women's awareness on MTCT of HIV, one of the HCPs in PMTCT section in Chanika health centre had the following to say:

" Even though awareness of mothers on MTCT of HIV is increasing from time to time, still some mothers don't have awareness and knowledge especially about the ways of transmission and its prevention methods".(HCP in PMTCT clinic in Chanika Health Centre *)*

Reasons of poor adherence to visits

Key informants were asked about the reasons for poor adherence to PMTCT services, lack of transportation fare from their home to the health facilities was reported as one of the reason that led them to fail in attending PMTCT Option B+ services, fear of stigma, long awaiting time for services lead to loss of huge time and congestion of clinic due to shortege of human resouce.

"Some of the pregnant women are very cooperative and understandable when they come for the first time at RCH clinic, they accept HIV testing and agreed to start ART on the same day. But some of them failed to adhere to their clinic visits due to multiple problems including fear of stigma, lack of transport fare and long waiting time" (HCP from Tabata A).

Fear of stigma, blame and abandonment was evidently demonstrated during the study, in which a researcher during the in-depth interview with one of the HCP from Amana hospital, in the city of Dar es Salaam was informed that:

"One couple who were under PMTCT services, after being assured, that the child has not been affected with HIV, the husband decided to take the child forcefully and provided a divorce note to his wife, while at the hospital gate" (HCP from Amana hospital).

4.9 Chapter Summary

This chapter presented the summary of findings in relation to the participant's knowledge on PMTCT and adherence to visits of HIV positive pregnant women on PMTCT Option B+ services within Ilala Municipal council. Majority of study participants showed high level of knowledge on PMTCT although 39.4% of respondents who were enrolled in PMTCT Option B+ services, still were not aware of the PMTCT services. However, 22.2% of participants did not come to clinic regularly due to various reasons including long waiting time, travelling long distance to the clinic and lack of transport fare. The next chapter focuses on the discussion of the research findings.

CHAPTER FIVE

5.0 DISCUSSION OF THE RESEARCH FINDINGS

5.1 Introduction

This chapter presents the discussion of the study findings which are centered on the quality of knowledge and adherence visit to PMTCT Option B+ services among HIV positive pregnant women in Ilala Municipality, in Dar es Salaam. The findings discussed below are as were analyzed and presented in chapter four, and are discussed basing on the specific objectives as were covered in chapter two. The discussion also compares the findings of this study with other similar studies and illustrates the similarities and differences.

5.2 General Profile of the Respondents

As indicated table 4.1 in chapter four, about 360(94%) of the respondents out of intended 383 respondents participated in the study, while 23(6%) did not participate in the study due to various reasons including Amana hospital being a Regional Referral hospital which have small number of pregnant women since it receives only pregnant women with complication from the lower level facility.

Data on respondents' age category shows that, the study found that the majority of the surveyed respondents were aged between 25 and 30 years, though some of them were nearly menopause stage. The implications of these findings is that, majority of the respondents were at reproductive ages, that is between 15 and 35 which is very healthy for their lives and their babies. However, nearly more than half of the respondents are still at productive age, which is necessary for them and the family in general as they are still energetic. This has great importance on the effectiveness of the PMTCT Option B+ utilizations as it requires adequate availability of health diet as well as other expenses which are involved in visiting health centers for collecting ARVs, health related complications as well as attending other Option B+ programs for instance counseling services, seminars and other related workshops.

With regards to respondents' marital status, the majority were married of the surveyed respondents 66.6% were married, though 21.6% and 11.6% were not married and separated respectively. In matters regarding its impact on the utilization of the PMTCT Option B+ services, literatures have provided that, marriage has negative impact on the effectiveness on utilization of the services, as the study done by Pathfinders International (2008) as cited by Karia(2012) in Kenya showed that about 43% of married women said that their husbands make decision on them concerning health related matters, while those who are not married have a full decision on matters related to health. On the other hand a study on PMTCT Option B+ in Uganda by Milly (2013) found that the never married women and divorced/separated women showed 68 percent and 88 percent odds less likely to utilize PMTCT Option B+ compared to the married women. Nevertheless, the next section will provide a clear picture on the influence of marital status on the effectiveness of PMTCT Option B+ utilization in Ilala municipality.

The findings on education showed that, although 7% of the respondents had never attended any school meaning that, they have not received any type of formal education; on the other hand the majority (93%) had received formal education under distinguished levels. This implies that, many respondents were in a position of understanding various concepts asked on PMTCT Option B+ services which were asked during the study as well as being able to understand and adhere to their visits to the PMTCT Option B+ services. The fact that, 7% had never attended school is still a challenge on PMTCT Option B+ programs as lack of education has been cited as one among the factors hindering the effectiveness of PMTCT Option B+ services, because as the woman's level of education increases, the likelihood of adhering to PMTCT Option B+ services increases compared to those with nor any formal education (Milly, 2013).

Moreover, about 54% of the respondents had self employment is one of the indicators of positive strategy of addressing the problem of unemployment at individual, family and national level, because the government currently is not capable of providing employment to all of its citizens. With regard to the relationship between respondents' occupation and the

uptake of the PMCT Option B+ services, earlier researches done in Ethiopia by Moges and Amberbir (2007) and Demissie, et.al (2010) have shown a positive association between the above occupation and PMCT utilization as it was found that, employed women were 4 times more likely to be tested and undertake PMCT services than unemployed women, and that government and privately employed pregnant women were more likely to be ready for PMCT services when compared with the housewives. A recent study by Due, et.al (2016) in Mali has reported that, PMTCT Option B+ service utilization was associated with age mother's occupational status (being an entrepreneur or government employment). On the other hand, the fact that, 30.2% of respondents had no any type of employment is not peculiar findings as the problem of unemployment is a growing issue in Tanzania and other developed countries.

The results on number of pregnancy as presented in table 4.2, have shown that, majority of the respondents' pregnancies ranged from 1 to 5, implying that the PMTCT Option B+ services are effective, as the uptake of the ARVs has enabled them to be at position of having children, in the sense that, HIV positive women are still conceived and benefited from the effective PMTCT program to deliver HIV negative babies. Wanzala, et.al (2014) has asserted that positive experiences and good provider-client relationship in PMTCT Option B+ services in Kenya have necessitated the likeliness of the pregnant women to have another child, provided that their CD4 counts allow.

5.3 Knowledge of Pregnant Women on HIV Disease and PMTCT Option B+ Program in Ilala Municipality

5.3.1 Knowledge on Sexually Transmitted Diseases (STIs)

Since the overall implementation of the PMTCT services was a result of the transmission of HIV, which to large percentage is transmitted through sexual intercourse, the respondents' knowledge on STIs was inquired by the researcher, in which 88.9% of the respondents were aware of STIs. The statistical test have also demonstrated a significant (p-value 0.0035) relationship between knowledge on STIs and the ways in which HIV is transmitted. The implication of this study is that, there has been a positive trend on the knowledge about STIs

which is very important step in combating them because STDs increases both HIV acquisition and transmission (Tobian and Quinn, 2009; Moodley, et.al, 2002 and Fleming and Wasserheit, 1999). The findings on the increase of knowledge and awareness on STIs have also highly been contributed by the respondent's level of education as it was seen earlier that, about 77% of the respondents had received formal education. The findings reflects those of Hayes et.al (2014) on the inadequacy of syndrome management of sexually transmitted Infections(STIs) in Tanzania which indicated that, higher education levels among the respondents were associated with lower prevalence of STIs. Education positively contributes to the knowledge and awareness on STDs. In fact, education is the pathway of communication for any message. The increased age with the increased level of education provides an opportunity to have more reproductive health information, as well as more use of heath care services and support from peer groups. Educated people can acquire more knowledge when they are exposed to sources of available information like electronic media (computer, Internet) and printed paper (books, newspapers, posters, booklets) mobile phones as well as the current social network forums. It was further noted that, mass media exposure, such as radio and TV and social media contributes on having knowledge and awareness about STDs among the women in the scoped area of the study. The exposure to such media can communicate knowledge and awareness about STDs through music, news reports, songs, dramas, documentaries and advertising, friendly and groups chatting messages and has profoundly influence the attitude and behavior of women, which is an important inputs towards combating STIs and HIV/AIDS. Thus women with access to mass media and other social network staffs have the opportunity to share their views and ideas with their friends and so they are more aware of the fact. Similarly, Islam et.al (2014) on a study concerning knowledge on STDs among women in Bangladesh which indicated that, most of the participants reported that they knew about STDs (79%). The same observation was reported by other studies in Bangladesh, India and South Africa in which the majority of the respondents have heard about STDs including HIV/AIDS (Yadav, et.al 2011; Krishna and Shashikumar, 2012 and Aboud et.al, 2010). Therefore, it implies that, there is a positive trend on the knowledge and awareness on STDs across the globe and especially in developing countries.

On the other hand it can be observed that, even though there has been an endless efforts of the government under the Tanzania Ministry of Health and other internal and local organizations in creating awareness on STIs and in special way HIV/AIDS, still lack of knowledge among the respondents from the scoped area of this study is still a challenge as it was evidenced by the findings that, about 11.1% of the respondents were not aware of the STIs. This implies that, knowledge, advocacy and awareness creation on STIs and specifically on HIV/AIDS, need to emphasize by the concerned health stakeholders and the society in general since it is one among the efforts of reducing the transmission of the STIs and their consequent effects. Nevertheless the findings as was observed in Ilala municipality are far better, as the current study in Bangladesh by Islam et.al (2017) showed that, 31% of the surveyed female students in the country were not familiar with STDs.

5.3.2 Ways of Acquiring HIV/AIDS

The findings have shown that, the respondents are aware of various ways of transmitting HIV/AIDS. As the study showed there is a significant relationship between knowledge of sexually transmitted diseases and ways of acquire HIV/AIDS. This is a great achievements as their knowledge and awareness is of great importance in fighting HIV/AIDS, due to the reason that they are in a position of getting rid of those ways in preventing others from being infected in the disease, taking into consideration that, about 99.3 (304) out of the 360 respondents who participated in the study were aware of ways of HIV transmission. The findings on the high level of knowledge on HIV/AIDS transmission are supported by another study which was done on knowledge of HIV transmission and associated factors among HIV-positive and HIV-negative patients in rural Kenya which showed that, HIV transmission knowledge score was relatively very high (Mwamburi, et.al, 2012). However, during the study, none of the respondents had raised the issue of multiple sexual partners as one of another ways of transmitting HIV/AIDS, though it has received much consideration in other literatures. For instance the study done in Malawi indicated that having more than one sexual partner was found to be a risk factor for STIs among youths in (Wilson and Sathiyasusuman 2015).

Data from the field also indicated that, among the surveyed 360 respondents during the study, 0.66% of the respondents were not aware of the ways in which HIV/AIDs is transmitted. This again is another challenge facing the efforts in eradicating HIV/AIDS, although the disease has existed for decades. This could be contributed highly to lack of education, as earlier observation above have shown that, the higher the respondents' level of education, the more they were aware on STDs and their mode of transmission, HIV/AIDS inclusive. The findings concurs with those of Mwamburi et.al (2012) that a greater lack of knowledge HIV/AIDS are mostly among those vulnerable individuals affected by combinations of lower education and lack of access to care.

5.3.3 Awareness about PMTCT Option B+ Services

The responses on awareness of PMTCT Option B+ services among the respondents showed that, there is a high level of community awareness on the availability and importance of the PMTCT Option B+ services in Ilala municipality. As it has been argued earlier, that 99.3% of the respondents were aware on HIV transmission, it can be observed that, they have heard about HIV/AIDS and its impact in community in terms of illness, death, economic problems, and orphanage. Moreover, majority of the study participants (60.5%) had the knowledge of PMTCT option B+ services and also know methods of prevention of HIV/AIDS. The rationale behind such awareness, among other factors has been contributed by their enrolment in PMTCT services which provide an opportunity to acquire in-depth knowledge on HIV/AIDS, other STIs and the contribution of PMTCT Option B+ services to both their health and their babies. The respondents were aware not only on how they can prevent the transmission to their babies, but also to their partners. Therefore, such observation is due to the reason that, most of the study participants in this study knew that HIV could be transmitted from an infected mother to her baby and most of them know what did the service PMTCT option B+ mean, its benefit and they had also positive attitude on PMTCT option B+ service. This is a great achievement to the community and the municipality at large, as the increased awareness contributes highly towards the target of the ministry of health in acquiring zero MTCT by 2030.

The results of the research has also indicated that, despite the fact that, apart from the HCPs who were included in the study, 39.4% of respondent who were enrolled in PMTCT Option B+ services, still were not aware of the PMTCT services. This is an indication that either, they were not well provided with adequate information by the HCPs, or the question was not clear to them. However, since it has been observed that, 7% of the respondents had never attended to school, this could be a contributing factor for such a lack of knowledge on PMTCT Option B+ services, hence their responses were very significant. Similar studies elsewhere did also indicated lack of knowledge among HIV positive women who were in PMTCT programs. For instance a study done in Malawi by Anita, et.al (2012) on PMTCT services, shows that knowledge about PMTCT option B+ was low, and women reported that counseling was overly biomedical with inadequate attention given to psychosocial issues, poverty, education, transport and food insecurity. Furthermore, another study done in Ugandan Landes, et.al (2009) also reported low levels of knowledge, about PMTCT option B+ service and explaining that they had not felt sufficiently empowered to ask questions for clarity during the PMTCT Option B+ teaching services session held in hospitals and health care centers. Therefore, lack of adequate awareness on PMTCT Option B+ services is still a challenge surrounding the effectiveness of the program.

5.3.4 Method used to acquire the PMTCT Knowledge

Having established the awareness on PMTCT Option B+ services among study participants , the research also intended to find out the methods that were used by the respodnets in acquiring creating awareness among the respondents on PMTCT Option B+ services. Awareness creation and knowledge on PMTCT Option B+ services to the public has grown well, in the sense that different mediums of communication are being employed to address the challenge of HIV/ AIDS and in special way the reduction of MTCT through effective make use of PMTCT Option B+ services. The medium of communications mentioned above, have shown that, the task of spreading knowledge and creating awareness on PMTCT Option B+ services, is no longer the government only through the respective health ministry and institutions, but it has been also a community task in collaboration with other health stakeholders and the media industry. This is very important and will highly contribute towards

the vision of the government to zero down MTCT and new HIV infections by 2030. The findings as observed in Ilala municipality have found very similar to those of Gwarzo (2009) on awareness and knowledge of mother-to-child transmission of HIV among mothers attending the pediatric HIV clinic in Kano, Nigeria, which indicated that, the main media of information on HIV/ AIDS among mothers were radio, television and public rallies. Radio programs and public campaigns have been quite successful in increasing knowledge about HIV/AIDS in Nigeria and have been the first source of knowledge about HIV/AIDS in northwestern Nigeria.

5.3.5 How to Avoid Mother-To-Child Transmission

This study also sought to find ways in which infected woman can avoid transmission of HIV to their babies during pregnanct period, delivery and breastfeeding. The respondents were in a position to cite some important methods they can use in preventing MTCT, which is a substantial achievement in combating HIV through MTCT; still the findings were not substantial as there were some other important missing information in their responses. It is clear that, the main objective of PMTCT Option B+ is to prevent MTCT of HIV during pregnant period, delivery and breastfeeding period. So it can be seen that, these three main periods were not cited fully by the respondents, which can bring a prediction that, there is no clear understanding of objective role of PMTCT Option B+ services among the respondents, as failure in one of these three periods can lead to MTCT of HIV to a child. Moreover, the responses on MTCT were not very consistent implying the existence of impartiality in the whole scope of PMTCT services. Furthermore, the responses on lack of knowledge on how to avoid MTCT of HIV to the children, was still another surprisingly response to the research as it is clear that, all responses were HIV positive pregnant women, under PMTCT Option B+ service programs, whom were expected to have a clear knowledge on the subject matters so long as they are the primary stakeholders of the program. This is another growing challenge facing the effectiveness of PMTCT Option B+ services, as other study done in other countries have shown 100% knowledge among HIV positive pregnant women on MTCT. For example, a study done by (Gwarzo, 2009) in Nigeria on awareness and knowledge of mother-to-child transmission of HIV among mothers attending the pediatric HIV clinic have shown that, all

the mothers in this study were aware of HIV/AIDS and the majority also demonstrated knowledge of mode of transmission and the course of the disease. This is commendable and may be attributed to many factors, including the high level of education of the respondents.

5.3.6 Opinion on the Importance Knowing HIV Status among Pregnant Women

During the study, the respondents were given an ample time to express their views concerning the necessity on knowing the HIV status among pregnant women in Ilala municipality, so long as HIV testing is one of the antenatal services. The fact that, 96.3% of the respondent positively credited the importance of knowing HIV status among pregnant women is due to the advantages acquired from the disposed status. If the women HIV status is negative, it means that they are provided with life and behavioral skills on measures to take so as to avoid the transmission of HIV/AIDS. On the other hand, if they test HIV positive, they are immediately enrolled to PMTCT Option B+ services, to reduce MTCT as well as enabling them to have good health. This implies that, knowledge of HIV status allows pregnant women access to PMTCT services. PMTCT services are designed to reduce the risk of HIV transmission from a HIV-positive mother to her child. MTCT also known as vertical transmission is the most common cause of pediatric HIV infection, often occurring during pregnancy, birth or breastfeeding. The findings are highly supported by World Health Organization (2015), that missed opportunities for HIV screening of pregnant women are perilous; knowing a woman's HIV status and enrolling her into available PMTCT services can help to reduce vertical HIV transmission. Thus, it is important that women who do access ANC are provided all of the recommended medical tests (including HIV tests) and linked to appropriate care through effective service integration.

The fact that, 3% of the respondents ignored the necessity of importance of knowing HIV status among women, is the sign of lack of knowledge and awareness on PMTCT Option B+ services in zeroing down the MTCT of HIV among children during pregnancy, delivery and breastfeeding period, as such responses has also earlier been demonstrated on areas of awareness on HIV and PMTCT Option B+ services.

5.4 Quality of Knowledge on PMTCT Option B+ Services among HIV Positive Pregnant Women in Ilala Municipality.

5.4.1 Provision of the Knowledge on three Key ways of MTCT of HIV during Counseling on HIV Testing

Previously in chapter one and two, it has been presented that, the provision of lifelong antiretroviral therapy (Option B+) is a new treatment regimen that was adopted by Tanzania in March 2013, whereby all pregnant and or breastfeeding women who test HIV positive are initiated on anti-retroviral therapy (ART) throughout the pregnancy and breastfeeding period and continue taking ART for the rest of their lives. The fundamental aim of ARV Option B+ is to prevent MTCT during the period of pregnancy, delivery and breastfeeding. This implies that, when administering this dose to HIV positive pregnant women, the HCPs are required to put clear this idea so as to enable the pregnant women to have clear knowledge and awareness PMTCT option B+, towards achievement of 100 MTCT to the concerned women. However, the findings have indicated that, in Ilala municipality, among the surveyed 360 respondents, only 90.8% of the respondents who had clear knowledge on the function role of PMTCT Option B+, while 9% were not well informed on the three ways in which MTCT is prevented during counseling services.

Despite the fact that, there is an increase on the awareness on how to prevent unborn infant from MTCT, still the implications of the findings is that, there were inadequacy either on the side of HCPs, or the HIV positive pregnant women during counseling exercises which led to ineffectiveness of delivering MTCT methods. This observation is very dangerous so long as inadequate delivering of knowledge during MTCT counseling may be disadvantageous to the baby, as may be transmitted either during pregnancy, delivery or breastfeeding, as mistake can be done on any of the mentioned three ways which were not clear to the women attending PMTCT clinics. Thus, will reduce the effectiveness of PMTCT Option B+ in eradicating MTCT and also mothers will not see the importance of adhering to the clinic visit to PMTCT services.

A study in Benin reported that only half the study participants had been told how to protect their infant from HIV during pregnancy, delivery or postpartum, and less than one third knew about HIV transmission through breastfeeding (La Ruche, 2008). Women in Uganda also reported low levels of PMTCT knowledge, explaining that they had not felt sufficiently empowered to ask questions during the session (Larsson, 2012).

5.4.2 Knowledge Sharing on the Advantages and Disadvantages of Infant Feeding Options in Accordance to National Guidelines

Usually when a child is on breast feeding period from HIV positive woman the duration for such breast feeding is done for six month, without being given any other kind of food or fluids, in which after that duration, the child is provided with feeding options as the substitute of the breast feeding from the mother. The feeding options have been adapted by the country from WHO in collaboration with other partners in PMTCT Option B+ services, and are provided with the guidelines. Consequently, the respondents were asked to provide their responses if at all they were provided with such knowledge when they were enrolled in PMTCT services. According to the third principle of the 2010 WHO Guidelines on HIV and Infant Feeding, national health authorities should decide on a strategy where health services will principally counsel and support HIV-infected mothers to either breastfeed their infants together with anti-retroviral (ARV) interventions, or to avoid all breastfeeding (WHO, 2010a). The directives made by WHO are very similar to the findings of the study as 91.6% of the respondents were aware of infants feeding. This implies that, HCPs in Ilala municipality are very familiar with infant feeding option as provided by WHO. Such understanding is necessary as knowledge will form the basis of this process of counseling. It is, therefore, expected that each healthcare worker should have an optimum level of knowledge regarding infant feeding and HIV, especially the ones working in the maternity wards. Moreover, efforts is needed to among the HCPs especially in delivering such knowledge as it was observed during the study that, about 8% of the respondents were not very familiar on the advantages and disadvantages of infant feeding option which is very disadvantageous to their infants, once they withdraw from breastfeeding.

5.4.3 Readiness to PMTCT Option B+ Services after being diagnosed as HIV Positive

Readiness to be enrolled and undertake PMTCT Option B+ services is one of the key areas as it enables the implementation of the program to the concerned HIV positive women. The respondents were asked about the readiness to be enrolled in the program when they were tested HIV positive and the findings have demonstrated the differences that exit on the readiness to start PMTCT Option B+ services after diagnosis, in which 92.5% were ready to start the program, while 7.5% were not ready to be start the medication. When respondents were asked the reasons behind such variation they explained that, the readiness depends on various factors ranging from personal, family and the society at large. These include, self acceptance of the situation, support from the partners and the family, stigma, confidentiality and the extent in which the infected woman has been informed and being convinced by the counseling, lobbying, advocacy and awareness creation by the HCPs. These factors are very important as they determine both short term and long adherence to the program. One of the HCP at Mnazimmoja hospital said that;

*"Some of them cry when they hear their HIV test result; they refuse their test result and said they should be tested at another health Institution. Hence, they refuse to collect ARV drugs or take it secretly and incorrectly due to fear of divorce, stigma or violence. Some of them change their address and disappear after they learned that they are HIV-positive due to the fear of stigma and discrimination"(***HCP at Mnazimmoja hospital*)

This implies that, the readiness of starting ART or lack of readiness during the diagnosis time, as well as not adhering to PMTCT services is subjected to various factors are still challenges as it was observed during the study. Previous studies have indicated that, women who started ART on the day they were diagnosed had a higher risk of lost of follow up than women who started ART later (Tenthani, 2014). Also other studies have suggested that women who start ART immediately after diagnosis do not have the chance to disclose their HIV status, and prior disclosure may improve ART adherence (Clouse, et.al, 2014). Lack of disclosure related to stigma and lack of male partner involvement has also been reported to deter postpartum women in HIV care under Option B+ (Clouse, 2014). Moreover, women's lack of readiness at ART initiation could result in interrupted treatment (Myer, et al, 2015). However, empirical

evidence regarding the advantages of systematically delayed ART is limited, implying that the HCPs should work tirelessly to ensure that, once pregnant woman test HIV positive, the implementation of PMTCT Option B+ should be administered immediately as proposed by physicians. Nevertheless, Ferguson (2013) has insisted that, denial and women "not feeling ready" to attend the HIV clinic, which emerged as barriers to accessing long-term HIV care and treatment services, might also be understood as a potential barrier to the immediate initiation of lifelong HAART.

5.4.4 Awareness of the Partners on HIV Status

As it has presented on table 4.16, it was seen during the study that, among the interviewed respondents, 67.2% had already communicated their HIV status to their partners. This is a necessary step as it enable the male partners to undertake HIV testing to know their status, if positive to be enrolled in ARV intake subject to the CD4 counts, measures to avoid transmitting others, avoiding secondary infections as well as providing support to the other partner (wife) in ensuring that they are properly adhered to ART and clinic visits as well for betterment of their health and the health of the baby to be born. It is also very important towards preventing HIV transmission to the partner, in case of partner is HIV negative.

On the other hand it was seen that, 32.7% of the respondents had not shared their HIV status to their partners. When asked the reasons behind such decisions, it was seen that, it is due to various factors such as fear, stigma from their partners and community, harassment from their partners and in confidentiality. WHO (2014) reported that, negative outcomes included blame, abandonment, anger, violence, stigma, and depression and were less commonly reported among those who disclose than positive outcomes. However, it is important to note that those who choose not to disclose may well be those who are most likely to have negative outcomes.

Other literatures on PMTCT services across the globe have provided evidence that stigma was perhaps the most frequently cited barrier to one's disclosure of HIV status. Stigma and discrimination were feared and/or experienced both within the health care setting and in the community more broadly. Importantly, many women struggled to disclose their HIV diagnosis to their partner for fear of negative repercussions that reflect pervasive societal stigma (Chinkonde et.al, 2010; Anderson, et.al, 2012 and Tenthani, et.al, 2014). Where emphasis was placed on women bringing their partners for HIV testing, this engendered anxiety among women. Since male partners' level of support positively or negatively affects women's uptake of services, additional support is needed for informed decision-making with regard to disclosure and assistance with how and when to disclose a diagnosis of HIV. Therefore, it can be observe that, HIV status disclosure to sexual partners was associated with positive outcomes including increased social support, acceptance, kindness, decreased anxiety and depression, and strengthening of relationships. While fear of negative outcomes was a major reported barrier to HIV status disclosure, most individuals who choose to disclose reported experiencing positive social outcomes as a result of disclosure including support and understanding from partners.

5.4.5 Emphasis on Practicing Safe Sex to Reduce Furthering HIV Transmission

The findings have shown that, the HCP from the visited hospital and health centers in Ilala municipality are doing well with regard to the emphasis provided to HIV positive pregnant women in practicing safe sex. This was evidenced by the findings in which it was observed that about 90.5% of the respondents strongly agreed that they were emphasized to adhere to safe sex practices within PMCT Option B+ program services, though less than one percent had a negative perception regarding to it. This is very important inputs as it prevents further HIV transmission to other partners who are HIV positive as well as placing them in safe condition in regard to secondary HIV infection. Secondary infection is very dangerous as it leads to ARVs failure and other related health hazards such as tuberculosis. Ray and Shapiro (2007) in their study on sexual health for people living with HIV have emphasized that knowledge is critical for such group to protect their health. Paucity of sexual health education

and services may lead HIV pregnant people to high risk, which in turn can contribute to high rates of STIs, HIV and unintended pregnancy.

5.5 Assessment of HIV Pregnant Women's Adherence to PMTCT Option B+ Services

5.5.1 Attendance to PMTCT Option B+ Clinic as Scheduled

Full attendance of the respondents to PMTCT Option B+ service clinics as prescribed by the HCPs is one of the central areas towards effectiveness of the program. The results have provided a positive picture on the HIV positive women's attendance to PMTCT Option B+ as it has been scheduled in the respective dispensaries, health centers and hospitals in Ilala municipality, as the level of attendance was found to be 77.7% among the surveyed respondents. On the other hand it was observed that, the study came across 22.2% of the respondents who failed to attend PMTCT Option B+ services as scheduled. Fear of disclosure and, more specifically, fear of potential repercussions of disclosure to male partners, was frequently mentioned as a barrier to accessing care and treatment services. Across Kenya, Uganda and the United Republic of Tanzania, women feared that blame, abandonment, divorce, domestic violence and loss of financial support might result from disclosure of their HIV status to their partner, and such disclosure contributes in not attending clinic consistently (Duff,et al. 2010; Otieno, et.al, 2010 and Watson-Jones, et.al, 2012).

5.5.2 Reasons for Missing PMTCT Option B+ Services

The respondents came out with various contributing factors on missing PMTCT Option B+ services in various dispensaries, health care centers and hospitals in Ilala municipality among the HIV positive women. These were lack of transport fare, long distance to the clinic and long waiting time for PMTCT Option B+ services. Although, the statistical tests (p value 0.5053) have shown that, there is no significant relationship between missing visits at PMTCT Option B+ services and the reasons behind it such as lack of fare, long distance, long waiting time client on safari and fear of stigma at (p value 0.5053).

About 31.9% of the respondents mentioned lack of transportation fare from their home to the health facilities as one of the factors that led them to fail in attending PMTCT Option B+ services. This factor was observed during the study as large part of the respondents being

unemployed in a formal employment, and even 30.2% were neither having formal employment nor self employment(not employed).This implies that, they lack income generation activities which could provide adequate transport fare for attending PMTCT Option B+ clinics. This is not a promising observation as lack of adequate income among the HIV positive pregnant women would not prevent them only from not attending PMTCT clinics, but also in accessing balanced diet which is a necessary input in the ART usage, and thus would have adverse effect to themselves and their unborn babies as well. The findings are supported by Hannock and Salem (2014) in Malawi which indicated lack of transport money and travel away from home as other contributing reasons to ART discontinuation.

Remoteness or long distance from the respondent's residential area to the PMTCT Option B+ clinics was also cited as one among the factors for failing to attend the PMTCT clinics. This has been contributed by the fact that, some of the respondents (18.6%) were residing outside the city and far from the location of the health centers to the extent that, they are supposed to have long walking to bus stations as well as longtime stay in the daladala due to traffic jams to and from the health centers. This facto has discouraged some of HIV positive pregnant women, not prefer attending to the clinics as scheduled, to the extent of even failing to attend.

Moreover, 18.0% of the respondents cited long waiting time during provision of PMTCT Option B+ services across the mentioned health facilities as one among the main reasons which made them to miss some clinics for PMTCT services.This is due to the fact that, long awaiting time for services lead to loss of huge time and thus it lead to tiredness, being bored and even failling to address other family responsibilities after the clinic hours. It was further added that, the long waiting hours for the service are also contributed by the congestion due to the increase of positive HIV pregnant women, other women who are taking ARVs and shortage of HCPs assigned for PMTCT Option B+ services. Karia (2008) in Kenya has cited health systems factors affecting utilization of PMCT services as poor working conditions, shortage of health care providers, high workload, lack of training, low morale, inadequate infrastructure and occasional stock-outs of the Nevirapine. Other reasons were travelling out of the city which accounts 23% and 3.7% fear of stigma to the PMTCT clinic.

Other earlier studies have also provided other reasons for ART discontinuation as due to travel away from home, lack of transport money, developing adverse side effects, being too sick to travel to clinic and limited understanding of the initial ART education session (Ferguson, 2013). The findings as presented above implies that, there is a need of decentralization of HIV services since it has been reported to be associated with improved retention by reducing transportation costs, travel time, and clinic wait times among other beets. Wringe et al (2013) writing on the reasons for accessibility, initiation and adhering to ARVs drugs to women who are under PMTCT programs of HIV in the Sub Saharan Africa, has argued that inadequate knowledge on HIV/ART/vertical transmission, low maternity training, and psychological issues associated with the diagnosis of HIV were major barriers.

5.5.3 Time Spent on Provision of PMTCT Option B+ Services in Ilala Municipality

The results as presented on table 4.20 implies that there is flexibility in time spent by HIV positive pregnant women in accessing PMTCT Option B+ services in various health centers and hospitals in Ilala municipality. Also the statistical tests have indicated that there is a significant relationship between regular visiting PMTCT Option+ services and waiting time in accessing the services at (p value 0.0032), in the sense that waiting time does determine regular attendance of HIV positive pregnant women to PMTCT Option B+ services. Time used in provision of any services is very important as it determines the likeness of the clients to attend the services in the future or not. If time spent for PMTCT services among the women is reasonable, they will necessarily be interested to attend the services in the next scheduled clinic, so long as they need other adequate time to undertake family responsibilities and other social economic activities for earning income for their life sustainability. On the other hand, if the time spent is too long in terms of hours, they will be discourage to attend the forth coming clinic due to hours they lost, which could be used to undertake other family and income generation activities. However, the time spent in getting services is also determined by other health facilities' factors such as availability of the HCPs as well as PMTCT facilities. This finding is consistent with a study conducted in Ethiopia by Dube et.al (2016) which reported that time spent for waiting the service was one among the determinants for the readiness of attending the PMTCT clinics or loss of follow up. The magnitude of this problem might be

due to large number of clients registering for ANC at some health facilities and shortage of man power (service providers).

5.5.4: Perception of the amount of time Spent on Receiving PMTCT Option B+ Services

The study have revealed that, half of the respondents (23.3%) had a negative perception on time spent in PMTCT Option B+ services clinics, in the sense that it was regarded as too much, though 70.2% considered it as very right or reasonable. This bring forward an implication that among the respondents who participated in the study more than half of them were not satisfied with the time spent, a situation which need to be addressed so as to retain them, and thus reduce absenteeism and loss of follow up in PMTCT Option B+ services. This observation is very important as Dube et.al(2016) have reported that, in Ethiopia, inadequate satisfaction of mothers towards service due to waiting for long time were major barriers to the uptake of PMTCT services. Moreover, the statistical tests have shown that there was significant relationship between time spent and attendance to PMTCT Option B+ services inclusively, as the time spent was affecting them relatively, in which some were satisfied, and others were not satisfied with the time spent.

5.6 The Contribution of Counseling on PMTCT Option B+ Services in Ilala Municipality

5.6.1 Provision of PMTCT Option B+ Counseling during Visits

Woman' knowledge on PMTCT is very essential towards achievements of PMTCT Option B+. The study shows about 93.3% of the respondents were adequately being provided with PMTCT Option B+ counseling services in Ilala municipality. The provision of counseling services is of great importance to the HIV pregnant women as it has greatly contributed to the acceptance of the HIV status, enrollment in the program and adherence to the use of ART doses. Even by the fact that, 94% of the respondents were ready to participate in this study is the results of the counseling services, as the study findings have also an implications to their HIV positive status' sustainability. Previous studies undertaken elsewhere drew attention to the importance of counseling being a positive and useful experience for clients to promote their return to the PMTCT services. A study by Gilles (2011) have indicated that, 8/19 (42%) women spontaneously mentioned advice or encouragement from clinic staff as a reason to

continue attending PMTCT services. Another study in Botswana found that 82% of women felt more inclined to have the HIV test and readiness to undertake PMTCT option B+ after diagnosis following counseling services, but 24% of the women who refused HIV testing reported that counseling convinced them not to test (Greek et.al. (2009).

5.6.2 Type of PMTCT Option B+ Counseling Services Provided

Data from the study have indicated that, there are two types of PMTCT Option B+ counseling services provided to the HIV positive pregnant women across the RCH in Ilala municipality. However, it is clear that, group counseling was more regularly being practices than one-to-ne counseling, which is also good. However, the prevailing of group counseling over one to one counseling has been contributed by the increase of the PMTCT Option B+ clients as well as inadequate HCPs who can accommodate all clients in one to one counseling services. This implies that, the HCPs on PMTCT Option B+ services in Ilala municipality are few and overloaded with works, to the extent that group counseling has been more efficient but not effective than one to one counseling services, as the clients may not be in position to comprehend the concepts on equal basis because some may be quick learners, while others may be slow learners. The findings reflect those of Dube (2016) in his study in Ethiopia which indicated that, post-test counseling and actual HIV positive counseling in many developing countries is usually done by ART nurses who may have limited time due to high workload. Therefore, engaging HIV testing counselors and ‘expert mothers’ in the provision of HIV test results and post-test counseling may facilitate acceptance of these major life changes over time and improve adherence to PMTCT services.

However, the respondents did not provide any information on couples’ counseling services in Ilala municipality, though it is well known that, couples’ counseling is of great importance towards the readiness of accepting HIV positive status, ARV and ART intake as well as adherence to the medication.

5.6.3 Nature of Discussion during Provision of Counseling

Findings have indicated that, 86.6% of the respondents were very satisfied with the contents of discussion during PMTCT Option B+ counseling services. When asked to mention those contents, it was seen that among them were the overall idea of HIV/ AIDS, relationship between HIV and AIDS and their differences, mode of transmission, HIV testing and medication issues, acceptance of HIV status, method of prevention, PMTCT Option B+ services and MTCT and the overall significance of ARV and ART. The respondents demonstrated high level of satisfaction with regard contents of counseling and were of the opinion that, such contents have widened their scope of understanding HIV/AIDS as well as readiness to retain themselves in PMTCT Option B+ services and the entire lifetime usage of antiretroviral prophylaxis and/or long-term care and treatment services.

On the other hand it was seen that, 13.3% of the respondents were not satisfied with the contents of PMTCT Option B+ counseling services, as they make them to be very fearful, tiresome and sometimes boring. The same observations has made by other earlier studies(Larsson, 2009, Greek et. Al 2009). This is an area of drawing attention to the HCPs, so long as the type of counseling provided should ensure that, the clients being counseled do feel at home and are retained in the program.

5.7 Chapter Summary

However, the general overview of the findings has demonstrated that, PMTCT Option B+ has been very effective among HIV positive pregnant women in Ilala municipality, though it is still being faced by some challenges which are very common elsewhere in developing countries. Despite the challenges noted so far, still the program is very optimistic given the fact that there are number of recommendations that have been suggested by the respondents to enhance the effectiveness of the program. Moreover, the concerned stakeholders – mainly the Ministry of Health, Community Development, Gender, Elderly and Children are still undertaking initiatives to make the program more successful.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter provides the synopsis in terms of conclusion and the policy implication (recommendations) for the study which was done to assess the knowledge and adherence visit to PMTCT option B+ services among HIV positive pregnant women in Ilala Municipality, in Dar es Salam region. The chapter also presents some policy implications basing on the findings and researcher' analysis so as to widen the knowledge and creating awareness on PMTCT Option B+ services which in turn will increase its utilization.

6.2 Conclusion

The study has demonstrated that, the establishment of PMTCT Option B+ services in Ilala municipality, has being effective. This is due to the high level of knowledge that was demonstrated by HIV positive women who are enrolled in the program. The fact that 60.5% of the respondents were well informed on the PMTCT Option B+ services, and that they were also well informed in other areas of HIV/ AIDS, STIs, ARV and ART, is a great achievement in combating MTCT HIV/ AIDS in general. Another success story is that about 77.7% of the HIV pregnant women were adhering to PMTCT Option B+ service provision. Nevertheless, efforts are still required in all other areas, in which some discrepancies were identified in terms of inadequacy of the knowledge, inadequate counselling skills, insuffieicient human resources and health facilities, as well the need to for continuing decentralization of the the services so as to be easily accessible to the clients.This is due to the reason that such discrepancies may prevent the clients from effectively and efficiently adhering visits to the PMTCT Option B+ services, which in turn will endanger their own health, unborn babies, without forgeting increasing vertical HIV transmission.Therefore, the possibility of having a healthy child born free of HIV (zero MTCT of HIV) is still promising, achievable and this constitutes a strong partnership from the government, NGOs and the community at large.

6.3 Recommendations

In view of the study findings, the researcher is hereby making the following recommendations which are necessary for effective PMTCT Option B+ services implementations.

6.3.1. The study has showed that, PMTCT Option B+ services are well established and available across all health centers and hospitals in the municipality. However, due to various factors with regard to easy accessibility of the services, such as remoteness some clients have been placed in disadvantageous position as they are negatively hindered by these factors to access the PMTCT Option B+ services. Therefore, the municipality in collaboration with the ministry of health and implementing partners in health should decentralize these services to the available dispensaries so as to make them accessible to the clients.

6.3.2. Due the fact that some of women do not adhering to clinic visit due to lack of transport fares and other constraints regarding to low economic status. There is need to improve their economic status by engaging them in support groups and other income generating activities e.g VICOBA that will then improve their economic status.

6.3.3. The study came across some of the pregnant mothers who were not satisfied with the long waiting time at the clinics. Efforts are needed to ensure that, the services are provided within a reasonable time so as to enable the women to have enough time to rest, as well as undertake other family and income generating activities. The scheduled PMTCT clinic days should not consume the whole day for a client, the recommended time spent for mothers at PMTCT clinic is between 45 minutes and 1 hour.

6.3.4. There should be adequate availability of the HCPs, buildings and other facilities in the clinics to ensure quality provision of PMTCT Option B+ services to clients. This recommendation is based on the views of the respondents that, there has been congestion in the PMTCT clinics due to few HCPs and lack of adequate facilities to accommodate them.

6.3.5. There is need to improve the skills, knowledge and attitudes of the providers of the PMTCT and HIV/AIDS counseling services so as to increase the enrolment of the HIV positive pregnant women in the program as well as improve the effectiveness of the program. This recommendation has been necessitated by the findings of the study, which showed that, there were difficulties in taking HIV test, readiness to start ART after diagnosis, missing clinics as well as loss of follow up.

6.3.6. The researcher also recommends the same studies to be done in other municipalities and councils so as to obtain a clear picture at regional level, which is an essential input in acquiring national overview on PMTCT Option B+ services.

REFERENCE

Aboud F, Huq NL, Larson CP, Ottisova L.(2010) An assessment of community readiness for HIV/AIDS preventive interventions in rural Bangladesh. Soc Sci Med 2010;70:360-7.

Anna Gamell et. al 2017 (2017) on Prevention of Mother to Child transmission of HIV Option B+ cascade in rural Tanzania: The one stop clinic model.

Anderson, G. et al.(2012) Community voices: barriers and opportunities for programmes to successfully prevent vertical transmission of HIV identified through consultations among people living with HIV. J Int AIDS Soc 2012; 15(Suppl. 2):17991

Anderson, G. et al.(2012). Community voices: barriers and opportunities for programmes to successfully prevent vertical transmission of HIV identified through consultations among people living with HIV. J Int AIDS Soc 2012; 15(Suppl. 2):17991.

Anigilaje EA, Ageda BR, Nweke NO.(2016) Barriers to uptake of prevention of mother-to-child transmission of HIV services among mothers of vertically infected HIV-seropositive infants in Makurdi, Nigeria. Patient Prefer Adherence. 2016;10:57-72.

Anita, H; Vernooij, E; Bongololo-Mbera, G; Cherutich, P; Desclaux & A, D Kyaddondo, (2012). Women's views on consent, counselling and confidentiality in PMTCT: a mixed- methods study in four African countries. BMC Public Health. 2012; 12: 26.

Asefa A, Beyene H.(2013) Awareness and knowledge on timing of mother-to-child transmission of HIV among antenatal care attending women in Southern Ethiopia: a cross sectional study. Reproductive health. 2013;10:66. PubMed PMID: 24330487.

Barbra Mapuranga, Shillah Rugonye, Ishmael Pombi, Women's perception on HIV/AIDS testing during pregnancy a, case of Mopani District in Nkowankowa Tzaneen South Africa, Journal of Health, Medicine and Nursing, 2015,Vol.19.

Chinkonde, J.R., J. Sundby, and F. Martinson, (2010). The prevention of mother-to-child HIV transmission programme in Lilongwe, Malawi: why do so many women drop out. Reprod Health Matters, 2009; 17(33):143-51. 20. Kasenga, F., A.K. Hurtig, and M. Emmelin, HIV-positive women's experiences of a PMTCT programme in rural Malawi. Midwifery, 2010; 26(1):27-37.

Clouse K, Schwartz S, Van Rie A, Bassett J, Yende N, Pettifor A. (2014). What they wanted was to give birth; nothing else": barriers to retention in option B+ HIV care among postpartum women in South Africa. Acquir Immune Defic Syndr. 2014;67:e12–8

Creek, T. et al.(2009). Factors associated with low early uptake of a national program to prevent mother to child transmission of HIV (PMTCT): results of a survey of mothers and providers, Botswana, 2003. AIDS Behav, 2009; 13(2):356-64.

Delelegn Tsegaye, Leul Deribe, Shambel Wodajo (2016), Levels of adherence and factors associated with adherence to option B+ prevention of mother-to-child transmission among pregnant and lactating mothers in selected government health facilities of South Wollo Zone, Amhara Region, northeast Ethiopia, 2016, Published online: October 13, 2016, accessed on January 24, 2017 on https://doi.org/10.4178/epih.e2016043

Demissie, A, Deribew, A and Abera, M.(2010)"Determinants of acceptance of voluntary HIV testing among antenatal clinic attendees at Dil Chora Hospital, Dire Dawa, East Ethiopia," Ethiopian Journal of Health Development, vol. 23, no. 2, pp. 142–147, 2010. View at Publisher.Department of Paediatrics, Bayero University, Kano, Kano State, Nigeria. Annals of African Medicine, Vol. 8, No. 4; 2009:210-214

Dube, L; Woldemichael, K & Merga, H.(2016). Utilization of Prevention of Mother-to-Child Transmission of HIV Services and Associated Factors among Antenatal Care Attending Mothers in Sebeta Town,Central Ethiopia. Department of Epidemiology, College of Health Sciences, Jimma University, Jimma, Ethiopia.

Hindawi Publishing Corporation, Advances in Public Health, Volume 2016, Article ID 6250898.

Dube, L; Woldemichael, K & Merga, H.(2016). Utilization of Prevention of Mother-to-Child Transmission of HIV Services and Associated Factors among Antenatal Care Attending Mothers in Sebeta Town, Central Ethiopia. Department of Epidemiology, College of Health Sciences, Jimma University, Jimma, Ethiopia. Research Article, Advances in Public Health,Volume 2016 (2016), Article ID 6250898.

Duff, P. et al. (2010) Barriers to accessing highly active antiretroviral therapy by HIVpositive women attending an antenatal clinic in a regional hospital in western Uganda. J Int AIDS Soc, 2010; 13:37.

Ebuy H, Yebyo H, Alemayehu M.(2015) Level of adherence and predictors of adherence to the Option B+ PMTCT programme in Tigray, northern Ethiopia. Int J Infect Dis. 2015 Apr;33:123- 9.

Eli Fjeld Falnes1, Thorkild Tylleskär, Marina Manuela de Paoli, Rachel Manongi, Ingunn MS Engebretsen(2010). Mothers' knowledge and utilization of prevention of mother to child transmission services in northern Tanzania, Journal of the International AIDS Society, 2010, 13:36.

Emma Bell, Promise Mthembu, Sue O'Sullivan, (2007) Sexual and Reproductive Health Services and HIV Testing: Perspectives and Experiences of Women and Men Living with HIV and AIDS, Reproductive Health Matters 2007;15(29 Supplement):113–135.

Ferguson, L. (2013). Women's experiences in services for preventing the mother-to-child transmission of HIV: a literature review. Institute for Global Health Program on Global Health and Human Rights Keck School of Medicine University of Southern California Los Angeles, California USA. WHO/HIV/2013.47. World Health Organization.

Finocchario-Kessler S, Clark KF, Khamadi S, Gautney BJ, Okoth V, Goggin K. Progress Toward Eliminating Mother to Child Transmission of HIV in Kenya: Review of Treatment Guideline Uptake and Pediatric Transmission at Four Government Hospitals Between 2010 and 2012. AIDS Behav. 2015 Apr 23.

Fleming DT, Wasserheit JN (1999) From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sex Transm Infect 75: 3–17

Gilles, K.P. et al. (2011).Factors influencing utilization of postpartum CD4 count testing by HIV-positive women not yet eligible for antiretroviral treatment. AIDS Care, 2011; 2 3(3):322-9.

Gourlay A, Birdthistle I, Mburu G, Iorpenda K, Wringe A (2013). Barriers and facilitating factors to the uptake of antiretroviral drugs for prevention of mother-to-child transmission of HIV in sub-Saharan Africa: a systematic review. Journal of the International AIDS Society. 2013;16:18588.

Government of Lesotho, National guidelines on the use of antiretroviral therapy for HIV prevention and treatment, April 2014

Gwarzo, G. D; Mukhtar --Yola, M & Adeleke, S. I.(2009) Awareness and knowledge of mother-to- child transmission of HIV among mothers attending the pediatric HIV clinic, Kano, Nigeria

Hannock, T and Salem, Gugsa,(2014). Understanding factors, outcomes and reasons for loss to follow-up among women in Option B+ PMTCT programme in Lilongwe, Malawi. Tropical Medicine and International Health doi:10.1111/tmi.12369.

Hardon, A.P. et al. (2009). Preventing mother-to-child transmission of HIV in Vietnam and Indonesia: diverging care dynamics. Soc Sci Med, 2009; 69(6):838-45.

Hayes et.al (2014) on the inadequacy of syndomic management of sexually transmitted Infections(STIs) which indicated that, higher education levels among the respondents were associated with lower prevalence of STIs.

Hayes, J.R; Kanpinga, S; Changalucha, J; Watson-Jones, D; Andresen, A; Hashim, R; Chilongani, J; Vanobberghen, M.F, Ao, T.T & Francis,C,S (2014). Epidemiology of Curable Sexually Transmitted Infections among Women at Increased Risk for HIV in Northwestern Tanzania: Inadequacy of Syndromic Management. Plosone Journals.

Islam et.al (2017) have shown that, in Bangladesh knowledge about the modes of transmission and prevention of the STDs diseases was poor. For instance the study reported that, HIV/AIDS was considered by 90% of participants as a public health threat to Bangladesh, mostly due to illiteracy, increased mortality, existence of risky sexual behavior, and aggression of Western culture.

Islam, M, S; Bhuiya,A,F & Mou, Z,S(2014). Knowledge and awareness about STDs among women in Bangladesh. BMC Public Health

Islam, M, S; Bhuiya,A,F & Mou, Z,S(2017). Knowledge and perceptions of sexually transmitted diseases, HIV/AIDS, and reproductive health among female students in Dhaka, Bangladesh. Department of Pharmacy, University of Dhaka, 1International Center for Diarrhoeal Disease Research, Dhaka, Bangladesh, and Center for International Health (CIH), Ludwig-Maximilians-Universität (LMU), Munich, Germany.

James C. Okoli et al. 2014. Barriers to successful implementation of prevention-of-mother-to-child-transmission (PMTCT) of HIV programmes in Malawi and Nigeria: a critical literature review study.

Joint United Nations Programme on HIV/AIDS. On the fast-track to an AIDS-free generation. Geneva: UNAIDS; 2016. Available from: http://www.unaids.org/sites/default/files/media_asset/GlobalPlan2016_en.pdf.

Judith Karia (2008) Factors affecting access and utilization of PMTCT services in Nairobi province Kenya. Thesis 2007 – 208 Karia 206

Kim MH, Zhou A, Mazenga A, Ahmed S, Markham C, Zomba G, et al.(2016) Why Did I Stop? Barriers and Facilitators to Uptake and Adherence to ART in Option B+ HIV Care in Lilongwe, Malawi. PLoS One. 2016;11(2):e0149527. PubMed PMID: 26901563.

Klaus K, Baldwin J, Izurieta R, Naik E, Seme A, Corvin J, et al.(2015) Reducing PMTCT attrition: Perspectives of HIV+ women on the Prevention of Mother-To-Child HIV services in Addis Ababa, Ethiopia. Ethiop Med J. 2015 Apr;53(2):91-104.

La Ruche, G. et al. (2008). Prevention of mother-to-child transmission of HIV: reviewing a programme in Benin. Sante Publique, 2008; 20(6):575-587.

Landes, M; Monique van Lettow, Cataldo, F; Chan, K,A; Barr, B,T & Harries, A.D (2009). Women's expectations of treatment and care after an antenatal HIV diagnosis in Lilongwe, Malawi. Reprod Health Matters, 2009; 17(33):152-61

Larsson, E.C. et al. (2012).Opt-out HIV testing during antenatal care: experiences of pregnant women in rural Uganda. Health Policy Plan, 2012; 27(1):69-75.

Leila Katirayi, Caspian Chouraya, Kwashie Kudiabor, Mohammed Ali Mahdi, Mary Pat Kieffer, Karen Marie Moland and Thorkild Tylleskar, (2016). Lessons learned from the PMTCT program in Swaziland: challenges with accepting lifelong ART for pregnant and lactating women a qualitative study, BMC Public Health (2016) 16:1119

Lyson Tenthani, Andreas D. Haas, Hannock Tweya, Andreas Jahn, Joep J. Van Oosterhout, Frank Chimbwandira, Zengani Chirwa, Wingston Ng'ambi, Alan Bakali, Sam Phiri, Landon Myer, Fabio Valeri, Marcel Zwahlen, Gilles Wandeler, and Olivia Keiser,(2014). Retention in care under universal Antiretroviral Therapy for HIV Infected Pregnant and Breastfeeding Women ("Option B+") in Malawi, AIDS Jon. 2014 Feb 20; 28(4): 589–598.

Malleshappa K, Krishna S, Shashikumar (2014). Awareness and attitude of youth toward HIV/AIDS in rural southern India. Biomed Res 2012;23:241-6.

Maurice Musheke,Virginia Bond and Sonja Merten,(2013)Self-care practices and experiences of people living with HIV not receiving antiretroviral therapy in an urban community of Lusaka, Zambia: implications for HIV treatment programmes, AIDS Research and Therapy, 2013, 10:12.

Mawar, N. et al. (2007). Concerns and experiences of women participating in a short-term AZT intervention feasibility study for prevention of HIV transmission from mother-to-child. Culture Health & Sexuality, 2007; 9(2):199-207.

Milly, M (2013). Factors Influencing Utilization of Prevention of Mother to Child Transmission (PMTCT) of HIV/AIDS in Uganda. A Dissertation Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Science in Population and Reproductive Health of Makerere University.

Moges and Amberbir (2007) and Demissie, et.al (2010) employed women were 4 times more likely to be tested and undertake PMCT services than unemployed women, and that government and privately employed pregnant women were more likely to be ready for PMCT services when compared with the housewives.

Moges, Z and Amberbir, A (2007). "Factors associated with readiness to VCT service utilization among pregnant women attending Clinics in Northwestern Ethiopia: a Health belief model approach," Ethiopian Journal of Health Sciences, vol. 21, no. 5, pp. 115–122, 2007.

Moodley P, Connolly C, Sturm AW (2002) Interrelationships among human immune deficiency virus type 1 infection, bacterial vaginosis, trichomoniasis, and the presence of yeasts. J Infect Dis 185: 69–73 Available: http://www.ncbi.nlm.nih.gov/pubmed/11756983.

Murithi LK, Masho SW, Vanderbilt A A.(2015) Factors enhancing utilization of and adherence to prevention of mother-to-child transmission (PMTCT) service in an urban setting in Kenya. AIDS Behav. 2015 Apr;19(4): 645-54.

Mwamburi, M; Mjomba, I; Mwero, B; Patta, S; Tang, M,A; Jordan, R.M; Omosa, G; Wanke, C; Thompson, D & Hong, Y,S.(2012). Knowledge of HIV Transmission and Associated Factors among HIV-Positive and HIV-Negative Patients in Rural Kenya

Myer L, Zulliger R, Bekker LG, Abrams E. (2012).Systemic delays in the initiation of antiretroviral therapy during pregnancy do not improve outcomes of HIV-positive mothers: a cohort study. BMC Pregnancy Childbirth. 2012;12:94.

Ngarina M, Popenoe R, Kilewo C, Biberfeld G, Ekstrom AM (2013). Reasons for poor adherence to antiretroviral therapy postnatally in HIV-1 infected women treated for their own health: experiences from the Mitra Plus study in Tanzania. BMC Public Health. 2013;13:450.

Otieno, P.A. et al.(2010) Determinants of failure to access care in mothers referred to HIV treatment programs in Nairobi, Kenya. AIDS Care, 2010; 22(6):729-736.

Okonkwo Kingsley C, Reich Kimberly, Alabi Adewale I, Umeike Nwaife , Nachman, Sharon A (2007). An Evaluation of Awareness: Attitudes and Beliefs of Pregnant Nigerian Women toward Voluntary Counselling and Testing for HIV. AIDS Patient Care & STDs. 2007; 21(4):252-60.

Rahangdale, L. et al.(2010). Stigma as experienced by women accessing prevention of parent-to-child transmission of HIV services in Karnataka, India. AIDS Care, 2010· 22(7):836-842.

Ray, S & Shapiro, K. (2007). Sexual Health for People Living with HIV. Reproductive Health Matters 2007; 15(29)

Sprague, C., M.F. Chersich, V. Black, (2011).Health system weaknesses constrains access to PMTCT and maternal HIV services in South Africa: a qualitative enquiry. AIDS Res Ther, 2011; 8:10.

Tenthani L, Haas AD, Tweya H, Jahn A, van Oosterhout JJ.(2014). Chimbwandira F (2014). Retention in care under universal antiretroviral therapy for HIV-infected pregnant and breastfeeding women ("Option B+") in Malawi. AIDS. 2014;28:589–98.

The National Guidelines for Comprehensive Care Services for Prevention of Mother-to-Child Transmission of HIV and Keeping Mothers Alive 2013

Tobian AA, Quinn TC (2009) Herpes simplex virus type 2 and syphilis infections with HIV: an evolving synergy in transmission and prevention. Curr Opin HIV AIDS 4: 294–299. Available:http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2752434&tool=pm centrez&rendertype=abstract. Accessed 2017, June 17.

UNAIDS Fact sheet - Latest statistics on the status of the AIDS epidemic accessed 2017

United Nations Children's Fund.(2014). Guidance on ensuring effective supply chain planning for commodities needed for implementation and scale up of services for the prevention of mother to child transmission (PMTCT) of HIV infection. 2008. http://www.unicef.org/supply/files/Guidance_Supply_Chain_Planning_PMTCT__July 2008.pdf.

Wanzala, P; Mutugi, M & Kevin, Marion, A.(2014) Knowledge and attitude of women on the available PMTCT services at the antenatal clinic of the Coast Province General Hospital. Institute of Tropical Medicine and Infectious Diseases, Jomo Kenyatta University of agriculture and Technology, Nairobi, Kenya, 2Kenya Medical Research Institute, Nairobi, Kenya. Pan African Medical Journal.

Watson-Jones, D. et al. (2012) Missed opportunities: poor linkage into ongoing care for HIV-positive pregnant women in Mwanza, Tanzania. PLoS ONE, 2012, 7(7).

WHO, (2010b). WHO PMTCT strategic vision 2010–2015: Preventing mother-to-child transmission of HIV to reach the UNGASS and Millennium development goals WHO, Geneva (2010).

Wilson, N and Sathiyasusuman, A.(2015). Associated Risk Factors of STIs and Multiple Sexual Relationships among Youths in Malawi, Pones Journals.

Yadav SB, Makwana NR, Vadera BN, Dhaduk KM, Gandha KM. Awareness of HIV/AIDS among rural youth in India: A community based cross-sectional study. J Infect Dev Ctries 2011;5:711-6.

APPENDICES

APPENDIX I: STRUCTURED QUESTIONNAIRE FOR SURVEY RESPONDENTS DODOSO LA UTAFITI

KNOWLEDGE AND ADHERENCE VISITS TO PMTCT OPTION B+ SERVICES AMONG HIV POSITIVES PREGNANT WOMEN IN ILALA MUNICIPALCOUNCIL.

Site Name:…….. Questionnaire Number ☐☐☐

A: Participant information

1. How old are you?.....

2. Marital status?
Married ☐ Divorce/Separation ☐ Not Married ☐

3. What is education level?
Primary ☐ Secondary ☐ University ☐ Never been to school ☐

5. What is your source of income?
Employed ☐ Self employment ☐ Not working ☐

6. What is the number of current pregnant? ☐

Level of Knowledge

1. Do you know of any sexually transmitted diseases?

1 Yes

2 No (skip to question 3)

2. In which ways can one acquire HIV/AIDS?

1 Sexual intercourse

2 Mother-to-child transmission

3 Blood transfusions

4 Sharing body-piecing/cutting instruments

5 Don’t know

6 Other (specify)…….

3. Can HIV be transmitted from a mother to a baby?

1 Yes

2 No (skip)

3 Do not know

If yes, how is it transmitted? .....

4. If a woman is HIV infected, is there any way to avoid HIV transmission to the baby?

1 Yes

2 No

3 Do not know

If yes how can it be avoided……

5. What can be done to avoid HIV transmission from mother to baby?

1 Use of ARVs

2 Not breastfeeding

3 Caesarean section

4 Other (specify)

5 Do not know

6. Have you ever heard of PMTCT?

1. Yes

2. No (skip to qn 8)

If yes, what do you know about it?

7. How did you come to know? (Multiple)

1. Friend/relative/peer

2. News papers (specify)

3. Radio (specify)

4. Hospital

5. Seminar/meeting

8. Have you ever heard of drugs that can prevent a baby from getting HIV/AIDS from the mother?

1. Yes

2. No

If yes, could you know some of those drugs?

9. In your opinion, do you think it is important to know your HIV status when pregnant?

1 Yes

2 No

Why……..

……

Why not……

…….

B. Quality of knowledge

10. During counseling and testing of HIV, were you told about three ways of MTCT—(during pregnancy, delivery, breast milk)?

1 Yes

2 No

11. During counseling and testing of HIV were you told about infant feeding options? (Advantages and disadvantages of each option according to national guidelines)?

1 Yes

2 No

12. After the test, you were found to be HIV positive, did you accept to take up the drugs that could prevent the baby from getting HIV/AIDS?

1. Yes

2. No

If yes, why would you take up the drugs?

……

……

If no, why wouldn't you take up the drugs?

……

13. Does your partner know your HIV status?

1 Yes

2 No

If not, Why? ……..

14. During counseling, where you told about practice safe sex to prevent further HIV transmission?

1 Yes

2 No

If yes, what do you do to prevent further transmission? ……

C. Adherence visits to PMTCT services

15. How much time did you spend for your PMTCT visit at this hospital?
    1. Minutes
    2. Hours
16. Would you say that the amount of time you spent was?
    1. Too much
    2. Just right
    3. Too short
17. Upon your regular visits PMTCT services, did the staff offer you PMTCT counseling?
    1. Yes
    2. No
18. If yes, how was the counselling done?
    1. One-to one
    2. Group counselling
19. Is there anything you did not like during the discussion about counseling?
    1. Yes
    2. No

    If yes/no, please state what it is

    ……..……
20. Do you come regularly to clinic for care as per schedule?
    1. Yes
    2. No

    If no, why not……

    ……
21. Have you ever missed any clinic visits for PMTCT care in the past 3.months?
    1. Yes
    2. No

22. If yes, how many visits did you miss for PMTCT care?

    1. One
    2. Two
    3. Three
    4. Does not remember

23. Reasons for missing

    1. Lack of fare
    2. Long distance to clinic
    3. Long waiting time
    4. On safari
    5. Fear of stigma
    6. Others (Specify) ……

APPENDIX II: INTERVIEW GUIDE TO HCWS (COUNSELORS)

1. Have you trained on PMTCT? (probe what is included, when started, availability, the target group, etc).

2. What are the key information do you tell pregnant women who comes for PMTCT services (during counselling).

3. Do pregnant women know about PMTCT? (Probe for response, do they adhere to Services, are they fully informed, who informs them, are their husbands informed about PMTCT).

4. What could be the causes of poor adherence visits to PMTCT program?

5. What are the other problems hindering the program (probe for the planned solutions to the above problems).

6. Suggest ways of improving PMTCT program in this area.

APPENDIX III: DODOSO LA UTAFITI

KNOWLEDGE AND ADHERENCE VISITS TO PMTCT OPTION B+ SERVICES AMONG HIV POSITIVES PREGNANT WOMEN IN ILALA MUNICIPALCOUNCIL**.**

Site Name:…….. Questionnaire Number ☐☐☐

A: Taarifa za Mshiriki

1. Una umri gani?.....

2. Hali ya ndoa?
Ameolewa ☐ Ameachika/Ametengana ☐ Hajaolewa ☐

3. Kiwango cha elimu yako?
Msingi ☐ Sekondari ☐ Chuo ☐ Hajasoma ☐

4. Ni kipi chanzo cha kipato chako?
Kuajiriwa ☐ Kujiajiri ☐ Hana Kazi ☐

5. Hii ni Mimba ya ngapi? ☐

6. Una watoto wangapi walio hai? ☐

B. Kiwango cha Elimu

1. Je, unafahamu magonjwa ya ngono?

1 Ndio

2 Hapana(Nenda swali namba 3)

2. Je, Ni njia zipi zinaweza kusababrisha mtu akapata maambukizi ya virusi vya ukimwi na Ukimwi?

1 Kujamiana

2 Kutoka kwa mama kwenda kwa mtoto

3 Kuongezewa damu

4 Kuchangia vitu vyenye ncha/kukatia

5 Sijui

6 Nyingine(elezea)…….

3. Maambukizi ya VVU yanaweza kuambukimbikzwa kutoka kwa Mama kwenda kwa motto??

1 Ndio

2 Hapana (Ruka)

3 Sijui

Kama ndio, ni kwa namna gani?

……..……

…..…….

4. Kama Mama ana maambukizi ya VVU, Je, kuna nmna yeyote ya kumkinga motto wake asipate maambukizi?

1. Ndio
2. Hapana
3. Sijui

Kama ndio, ni kwa namna gani maambukizi yanweza kuzuiwa ……

5. Ni njia zipi zinaweza kutumika ili kukinga maambukizi ya VVU kutoka kwa Mama kwenda kwa mtoto? (weka tiki kwa zote atakazotaja)

1. Kutumia za ARV
2. Kuacha kunyonyesha maziwa ya mama
3. Kuzaa kwa upasuaji
4. Nyingine (Elezea)……
5. Sijui

6. Je, umewahi kusikia PMTCT?

1. Ndio
2. Hapana (Nenda swali namba 8)

Kama ndiyo, unafahamu nini kuhusu hiyo……

7. Je, ulifahamuje kuhusu PMTCT (Zaidi ya moja)
    1. Rafiki/ Ndugu/Wanarika
    2. Magazeti (elezea)3. Redio (Elezea) 4. Hospitali
    5. Semina/Mikutano
8. Umewahi kusikia juu ya dawa zinazozuia motto asipate maambukizi ya VVU/Ukimwi toka Mama
    1. Ndiyo
    2. Hapana

    Kama ndiyo, je, unazifahamu baadhi ya dawa hizo?

9. Kwa mawazo yako, unafikiri ni muhimu kufahamu hali yako ya maambukizi ya VVU wakati ukiwa mjamzito?
    1. Ndio
    2. Hapana

Kama Ndiyo au Hapana (Eleza ni kwa nini)……..

C. Ubora wa Elimu

10. Je, wakati wa unasihi na kupima uliambiwa kuhusiana na njia tatu za maambukizi ya VVU toka mama kwenda kwa motto – (Wakati wa ujauzito, Kujifungu na kunyonyesha)?
    1. Ndiyo
    2. Hapana

11. Wakati wa unasihi na upimaji wa VVU uliambiwa kuhusiana namna ya ulishaji wa mtoto mchnga (Faida na hasara za kila namna ya ulishaji wa motto mchnga kulingana na muongozo wa Taifa).
    1. Ndio
    2. Hapana

12. Baada ya kupima, kama ulikutwa na maambukizi ya VVU, Je, ulikubali kutumia dawa za ambazo zitazuia maambukizi ya VVU kwenda kwa motto?

    1. Ndio

    2. Hapana

    Kama ndiyo, Kwanini uliamua kutumia dawa??

    ……

    ……

    Kama hapana, Kwanini hujatumia dawa??

    ……

    .……

    ……

13. Je, Mwenza wako anafahamu hali yako ya maambukizi ya VVU??

    1. Ndiyo 2. Hapana

    Kama hapna, Kwann? ……

14.Wakati wa unasihi, uliambiwa kuhusiana na kufanya ngono iliyo salama ili kujikinga na maambukizi mapya ya VVU?

    1. Ndiyo

    2. Hayana

    Kama ndiyo, Unafanya unatumia njia gani ya kujikinga na maambukizi mapya ya VVU?

    ……..……

    …….

D. Ufuasi wa Mahudhurio ya kliniki ya Huduma za PMTCT

15. Ni muda gani umetumia katika kliniki kwa huduma za PMTCT katika hospitali hii?

    1. Dakika

    2.Masaa

16. Je, unaweza kusema kuwa muda uliotumia hapa ulikua?

    1. Muda mwingi sana

    2. Muda wa kawaida

    3. Muda mchache mnoo

17. Katika mahudhurio yako ya kawada katika kliniki ya huduma za PMTCT, Je, unapatiwa unasihi juu ya huduma za maambukizi ya VVU toka kwa mama kwenda kwa motto?

    1. Ndio

    2. Hapana

18. Kama ndiyo, Unasihi unatolewaje?

    1. Kwa mtu mmoj mmoja

    2. Kwa kikundi cha watu

19. Je, kuna jambo lolote hujalipenda wakati wa majadiliano juu ya unasihi?

    1. Ndiyo

    2. Hapana

    Kama Ndiyo/Hapana elezea ni jambo gani hilo

    ……..……

20. Je, Unahudhuria kliniki kama kawaida kulingana na tarehe ulivyopangiwa?

    1. Ndiyo

    2. Hapana

    Kama hapna ni kwa nini? ……

21. Je, umewahi kukosa kuhudhuria kliniki ya PMTCT katika kipindi cha miezi mitatu?

    1. Ndiyo
    2. Hapana

22. Kama ndiyo, Ni mahudhurio mangapi hukuhudhuria katika kliniki hii ya PMTCT?

    1. Moja
    2. Mawili
    3. Matatu
    4. Hakumbuki

23. Sababu ya kukosa hudhurio

    1. Kukosa nauli
    2. Umbali wa kufika kiliniki
    3. Muda mwingi wa kusubiri
    4. Alikua safari
    5. Kuogopa Unyanyapaa
    6. Nyingine (Elezea) ……

APPENDIX IV: INTERVIEW GUIDE TO HCWS (COUNSELORS) SWAHILI

1. Umewahi kufundishwa PMTCT? (Ulizia,
   Mafunzo hayo yana husisha nini, na yalianza lini, upatikanaji wa mafunzo nan i kwa kina nani).

2. Ni ujumbe/taarifa gani muhimu unazowaambia kina mama wajawazito wanapokuja kwa ajili ya huduma za kuzuia maambukizi ya VVU toka kwa mama kwenda kwa motto (Wakati wa unasihi)

3. Je, kina mama wajawazito wanafahamu kuhusu huduma za maambukizi ya VVU toka kwa Mama kwenda kwa motto.Ulizia, wakina mama wanahudhuria kliniki kulingana na tarehe walizopangiwa, Wanataarifa muhimu kuhusiana na PMTCT, nani anawapa hizo taarifa, wenza wao wana taarifa)

4. Nini kinaweza kikawa sababu ya ufuasi mdogo katika mahudhurio yao ya kliniki ya Kuzuia Maambukizi ya VVU toka kwa mama kwenda kwa motto.?

5. Je? Ni vikwazo gani vingine vinaleta ugumu katika utoaji wa huduma hii? (Ulizia mipango namna kupambana/kuzuia vikwazo hivyo)

6. Shauri njia za kuweza kuboresha utoaji wa huduma za Kuzuia maambukizi ya VVU toka kwa mama kwend kwa motto katika eneo hili.

APPENDIX V: INFORMED CONSENT, ENGLISH VERSION

ID NO:…….

KNOWLEDGE AND ADHERENCE VISITS TO PMTCT OPTION B+ SERVICES AMONG HIV POSITIVES PREGNANT WOMEN IN ILALA MUNICIPALCOUNCIL.

- **Purpose of study:** This study will give an understanding in terms of knowledge and adherence to visits on PMTCT option B+ among HIV infected women to improve retention of infected pregnant women into care and treatment. This will then help in planning strategies to improve PMTCT option B+ program in the local area and the country at large.
- **What participation involved**

  If you agree to participate in this study, the following will occur:

  1. You will be interviewed to obtain the information relating to the understanding of prevention of HIV transmission from Mother to their babies and clinic attendances.
  2. No identifying information will be collected from you, during this interview, except your age and gender.
  3. The interview will not take more than 20 minutes to answer.
- **Confidentiality:** I assure you that all information collected from you will be kept confidentially. Only people working in this research study will have access to the information. We will be compiling a report which will contain responses from several mothers attending this clinic without any reference to individuals. We will not put any of your identifying information on the records of information you provide.

Risks: We do not expect any harm to happen to you as a result of participating in this study. It is voluntary for you to participate in this study, you can choose not to participate in this study at any point and refusal will not involve any penalty or loss of any benefits from getting services.

Benefits:

The information that you provide will give a better understanding of use of PMTCT services within Ilala Municipal Council.

Who to contact

If you ever have questions about this study; please contact principal investigator; Ayoub M. Kibao, Muhimbili University of Health and Allied Sciences (MUHAS); P.O.BOX 65001; Dar es Salaam.

I, the undersigned, confirm that (please tick box as appropriate):

1.	I have read and understood the information about the project, as provided in the Information Sheet dated _____	☐
2.	I have been given the opportunity to ask questions about the project and my participation.	☐
3.	I voluntarily agree to participate in the project.	☐
4.	The procedures regarding confidentiality have been clearly explained (e.g. use of names, pseudonyms, anonymisation of data, etc.) to me.	☐
5.	The use of the data in research, publications, sharing and archiving has been explained to me.	☐
6.	I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form.	☐
7.	I, along with the Researcher, agree to sign and date this informed consent form.	☐

Participant:

…… ……. ……

Name of participant Signature Date

Researcher:

…… ……. ……

Name of Researcher Signature Date

APPENDIX VI: HEALTH CARE WORKER'S OBSERVATION FORM

Health Care Worker Observation Form:
Antenatal Clinic (RCH)

Name of Health Facility----------

Name of Observer----------

Name of Health care Provider----------

Date----------

1. **Has HCW attended PMTCT training?** Yes ☐ No ☐
   If yes: month/year HCW attended PMTCT training: _____
   Trained by: (organization): _____

2. **Has HCW attended VCT training?** Yes ☐ No ☐
   If yes: month/year HCW attended PMTCT training: _____
   Trained by: (organization): _____

3. **HCW presentation of group education session**

Observed ☐ **Did not observe** ☐

Did HCW cover the following topics:	**Yes**	**No**
a) HIV testing?	☐	☐
b) Partner Testing?	☐	☐
c) Pregnancy and HIV?	☐	☐
d) MTCT—three ways (during pregnancy, delivery, breast milk)?	☐	☐
e) Use of ART?	☐	☐
f) Adherence to Clinic Visit?	☐	☐
g) Infant-feeding options (advantages and disadvantages of each option according to national guidelines)?	☐	☐
h) HIV prevention?	☐	☐

Individual counseling sessions

Observed ☐ **Did not observe** ☐

Did the HCW:	**Yes**	**No**	**Not applicable**
a) Revisit the risk-reduction plan?	☐	☐	☐
b) Address disclosure and partner referral?	☐	☐	☐
c) Discuss infant-feeding options?	☐	☐	☐
d) Screen client for TB and other OIs?	☐	☐	☐
e) Check adherence to ART	☐	☐	☐
f) Provide Nevirapine to baby take home according to the guidelines?	☐	☐	☐
g) Provide routine ANC follow-up care?	☐	☐	☐
h) Discuss future family-planning options?	☐	☐	☐
i) Discuss importance adherence to visits	☐	☐	☐

Interpersonal skills: Please answer the following questions based on your overall observation of the HCW:

Did the HCW:	**Yes**	**No**
a) Receive patient in welcoming manner?	☐	☐
b) Create a trusting/supportive rapport with patient?	☐	☐
c) Listen to patient's ideas and concerns?	☐	☐
d) Invite patient to ask questions?	☐	☐
e) Attempt to respond to each of the patient's questions?	☐	☐
f) Avoid judgment or disapproval?	☐	☐
g) Treat patient with empathy, dignity, and respect?	☐	☐
h) Use language and words that could be easily understood by the patient?	☐	☐
i) Check to be sure the patient understood the information provided?	☐	☐
j) Maintain confidentiality? (Conduct session in private area, maintain low speaking voice)	☐	☐

Comments:

APPENDIX VII: MUHAS ETHICAL CLEARENCE

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES

P.O. Box 65001
DAR ES SALAAM
TANZANIA
Web: www.muhas.ac.tz

Tel G/Line: +255-22-2150302/6 Ext. 1015
Direct Line: +255-22-2151378
Telefax: +255-22-2150465
E-mail: dpgs@muhas.ac.tz

Ref. No. MU/ PGS/SAEC/Vol. IX/ 3rd May, 2017

Mr. Ayoub M. Kibao
MPH-Executive Track
MUHAS.

RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED: "KNOWLEDGE AND ADHERENCE VISITS TO PMTCT OPTON B+ SERVICE AMONG HIV POSITIVES PREGNANT WOMEN IN ILALA MUNICIPAL"

Reference is made to the above heading.

I am pleased to inform you that, the Chairman has, on behalf of the Senate, approved ethical clearance for the above-mentioned study. Hence you may proceed with the planned study.

The ethical clearance is valid for one year only, from 3rd May, 2017 to 2nd May, 2018. In case you do not complete data analysis and dissertation report writing by 2nd May, 2018, you will have to apply for renewal of ethical clearance prior to the expiry date.

Prof. Andrea B. Pembe
DIRECTOR OF POSTGRADUATE STUDIES

cc: Director of Research and Publications
cc: Dean, School of Public Health and Social Sciences

APPENDIX VIII: REGIONAL APPROVAL

DAR ES SALAAM REGION
Tel No. 2203156/2203158
E-mail *dsmras@yahoo.com*
In reply please quote:

Ref. No. FA.282/293/01S/ 229



Regional Commissioner's Office,
P. O box 5429,
3 Rashid Kawawa Road
12880 **DAR ES SALAAM.**
12/05/2017

The Municipal Director,
Ilala,
DAR ES SALAAM.

RE: Study on knowledge and adherence visit to PMTCT Option B+services among HIV positive pregnant women in Ilala Municipal Council

Please, refer the above heading.

I acknowledge to receive the letter from Muhimbili University of Health and Allied Sciences that introduce Dr Ayoub who is pursuing MPH at Muhimbili University. He is requesting to do the above mentioned research in Dar es Salaam region in Ilala Municipality.

Therefore, the permission is given to Dr Ayubu Kibao to conduct the research study in Amana Hospital, Mnazimmoja hospital, Chanika Health Centre, Buguruni Health Center,Vingunguti Dispensary and Tabata A Dispensary.

I kindly request you to support him.

Thank you for your cooperation.

Dr. Ndeniria Swai
For: **REGIONAL ADMINISTRATIVE SECRETARY**
DAR ES SALAAM

c.c: District Medical Officer,
Ilala,
DAR ES SALAAM

: Medical Officer In charge
Amana Hospital, Mnazi mmoja Hospital,
Buguruni Health Centre, Chanika Health Centre
Vingunguti Dispensary and Tabata A Dispensary

APPENDIX IX: ILALA DISTRICT APPROVAL

The United Republic of Tanzania

Prime Ministers' Office

REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

ILALA DISTRICT
Phone Address:

Phone No: 2203185/2203182

In reply quote: Ref. No: AB.60/87/01/

DISTRICT COMMISSIONER'S OFFICE
ILALA DISTRICT
P. O. Box 15486,
DAR ES SALAAM

Date: 9/05/2017

Municipal Director,
P. O. Box 20950,
ILALA – D'SALAAM.

RE: RESEARCH PERMIT

Prof./Dr./~~Mr./Mrs./MS./Miss~~: AYOUB MOHAMED KIBAO
from The .... MUHAS ....., ~~she~~/he has been permitted to undertake a field work research on "KNOWLEDGE AND ADHERENCE VISITS TO PMTCT OPTION B+ SERVICES AMONG HIV POSITIVE PREGNANT WOMEN IN ILALA." *The case study at Ilala District from* 15/05/..201..... *to* 14/06/..2017....

Therefore, you are asked to give the said researchers necessary assistance and Cooperation.

District Administrative Secretary
ILALA

Copy: .....

.....

Principal/Vice Chancellor,
MUHAS ✓

.....