



UGANDA MANAGEMENT INSTITUTE

**FACTORS THAT INFLUENCE THE UTILIZATION OF PREVENTION OF  
MOTHER TO CHILD TRANSMISSION SERVICES IN MULAGO  
NATIONAL REFERRAL HOSPITAL, UGANDA.**

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## DECLARATION

I, *Jolly Grace Mbabazi Atwakiire* hereby declare that, this is my original work and has not been presented to any university or institutions of higher learning for any academic award. Where secondary sources of information used in this work, have been acknowledged.

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Signed .....

## **APPROVAL**

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## **DEDICATION**

This dissertation is dedicated to my dear husband Mr. Bangirana Bernard and our children, Taremwa Martin, Ampereza Lawrence and Tayebwa Isaac for they tolerated me as “an absentee wife and mother of the family” for the years I spent pursuing the course.

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## TABLE OF CONTENTS

DECLARATION .....	i
APPROVAL .....	ii
DEDICATION .....	iii
ACKNOWLEDGEMENT .....	iv
TABLE OF CONTENTS.....	v
LIST OF TABLES .....	xi
LIST OF FIGURES .....	xii
LIST OF ACRONYMS .....	xiii
ABSTRACT.....	xiv
<b>CHAPTER ONE .....</b>	<b>1</b>
<b>INTRODUCTION.....</b>	<b>1</b>
1.1 Introduction.....	1
1.2 Background of the study .....	1
1.2.1 Historical background.....	1
1.2.2 Theoretical background .....	3
1.2.3 Conceptual background .....	4
1.2.4 Contextual background .....	5
1.3 Statement of the problem.....	6
1.4 Purpose of the study.....	7
1.5 Objectives of the study.....	7
1.6 Research questions.....	7
1.7 Research hypotheses .....	8

1.8 Conceptual frame work.....	9
1.9 Significance of the study.....	10
1.10 Justification of the study.....	10
1.11 Scope of the study:.....	11
1.11.1 Geographical scope.....	11
1.11.2 Content scope.....	11
1.11.3 Time scope.....	12
1.12 Operational definitions.....	12
<b>CHAPTER TWO .....</b>	<b>13</b>
<b>LITERATURE REVIEW .....</b>	<b>13</b>
2.1 Introduction:.....	13
2.2 Theoretical framework:.....	13
2.3.1 Predisposing/Patient factors and utilization of PMTCT services: .....	14
2.3.2 Socio-economic and cultural factors and the utilization of PMTCT services. ....	17
2.3.3 Health system related factors and the utilization of PMTCT services.....	21
2.4 Summary of the literature review .....	23
<b>CHAPTER THREE .....</b>	<b>24</b>
<b>METHODOLOGY .....</b>	<b>24</b>
3.1 Introduction.....	24
3.2 Research Design.....	24
3.3 Study Population.....	25
3.4 Determination of the Sample Size .....	25
3.5 Sampling Techniques.....	26

3.5.1 Probabilistic Sampling Techniques.....	26
3.5.2 Non-probabilistic Sampling Techniques.....	26
3.6 Data Collection Methods .....	26
3.6.1 Questionnaire Survey.....	26
3.6.2 Interview .....	27
3.6.3 Documentary Review.....	27
3.7 Data Collection Instruments .....	27
3.7.1 Questionnaire .....	27
3.7.2 Interview guide .....	28
3.7.3 Documentary Review Checklist .....	28
3.8 Quality control .....	28
3.8.1 Validity .....	28
3.8.2 Reliability.....	29
3.9 Data Collection Procedures.....	30
3.10 Data Analysis .....	31
3.10.1 Quantitative data analysis .....	31
3.10.2 Qualitative data analysis .....	31
3.11 Measurement of Variables .....	32
3.12 Ethical considerations .....	32
<b>CHAPTER FOUR.....</b>	<b>34</b>
<b>PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS.....</b>	<b>34</b>
4.1 Introduction.....	34
4.2 Response rate. ....	34



4.3 Background of the Respondents .....	35
4.3.1 Gender of the respondents .....	35
4.3.2 Age of the Respondents .....	36
4.3.3 Level of Education of the Respondents .....	37
4.3.4 Marital Status of respondent .....	37
4.3.5 Nature of Marriage of respondent.....	38
4.3.6 Occupations of respondent.....	39
4.4. Empirical findings.....	40
4.4.1 Findings on availability of PMTCT services in Mulago referral Hospital .....	41
4.4.2 Findings on the predisposing factors influencing the utilization of PMTCT services in Mulago Referral Hospital .....	44
4.4.2.1 Correlation results for Predisposing factors and utilization of PMTCT services .	48
4.4.2.2 Regression results for Predisposing factors and utilization of PMTCT services..	49
4.4.3 Findings on the socio-economic and cultural factors influencing the utilization of PMTCT services in Mulago Referral Hospital .....	51
4.4.3.1 Correlation results on the influence of socio-economic and cultural factors on utilization of PMTCT services.....	55
Table 10: Correlation results for influence of socio-economic and cultural factors on utilization of PMTCT services.....	55
4.4.3.2 Regression results for influence of socio-economic and cultural factors on utilization of PMTCT services.....	57
4.4.4 Findings on the influence of health system related factors on the utilization of PMTCT services in Mulago Referral Hospital .....	58

4.4.4.1 Correlation results for the influence of health system related factors on the utilization of PMTCT services.....	62
4.4.4.2. Regression results for influence of health system related factors on the utilization of PMTCT services.....	64
<b>CHAPTER FIVE .....</b>	<b>66</b>
<b>SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>66</b>
5.1 Introduction.....	66
5.2 Summary.....	66
5.2.1 The influence of Predisposing factors on utilization of PMTCT services.....	66
5.2.2 The influence of Socio-economic and cultural factors on utilization of PMTCT services.....	66
5.2.3 The influence of Health systems related factors on utilization of PMTCT services .....	.67
5.3 Discussion of findings.....	67
5.3.1 The influence of predisposing factors on utilization of PMTCT services .....	67
5.3.2 The influence of socio-economic and cultural factors on utilization of PMTCT services.....	69
5.3.1. The influence of health systems related factors on utilization of PMTCT services	72
5.4. Conclusions.....	74
5.4.1. The influence of predisposing factors on utilization of PMTCT services .....	74
5.4.2. The influence of socio-economic and cultural factors on utilization of PMTCT services.....	74
5.4.2. The influence of health systems related factors on utilization of PMTCT services	75

5.5 Recommendations.....	75
5.5.1The influence of predisposing factors on utilization of PMTCT services .....	75
5.5.2 The influence of socio-economic and cultural factors on utilization of PMTCT services.....	76
5.6. The influence of health systems related factors on utilization of PMTCT services ..	77
5.7. Limitations of the study .....	77
5.8. Contributions of the study: .....	77
5.9 Areas for Further Research .....	78
<b>REFERENCES: .....</b>	<b>79</b>
<b>APPENDICES .....</b>	<b>87</b>
APPENDIX I: QUESTIONNAIRE FOR MOTHERS SEEKING PMTCT SERVICES IN MULAGO REFERRAL HOSPITAL .....	87
APPENDIX II: INTERVIEW SCHEDULE FOR MEDICAL WORKERS IN PMTCT SERVICES IN MULAGO REFERRAL HOSPITAL .....	95
APPENDIX III: TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN POPULATION .....	97

## LIST OF TABLES

Table 1: Sample Size of Respondents and Sampling Technique.....	25
Table .2 Content Validity Indices for the Questionnaire.....	29
Table 3: Reliability indices for the respective sections of the questionnaire.....	30
Table 4: showing the response rate.....	34
Table 5: Descriptive Statistics on availability of PMTCT services.....	41
Table 6: Descriptive Statistics on the predisposing factors influencing the utilization of PMTCT services.....	45
Table 7: Correlation results for Predisposing factors and utilization of PMTCT services.....	48
Table 8: Model summary for Predisposing factors and utilization of PMTCT services.....	50
Table 9: Descriptive Statistics on socio-economic and cultural factors influencing the utilization of PMTCT services.....	52
Table 10: Correlation results for influence of socio-economic and cultural factors on utilization of PMTCT services.....	55
Table 11: Model summary on influence of socio-economic and cultural factors on utilization of PMTCT services.....	57
Table 12: Descriptive Statistics on the influence of health system related factors on the utilization of PMTCT services in Mulago Referral Hospital.....	59
Table 13: Correlation results for influence of health system related factors on the utilization of PMTCT services.....	62
Table 14: Model summary for influence of health system related factors on the utilization of PMTCT services.....	64

## LIST OF FIGURES

Figure 1: A Conceptual Framework for the understanding the factors influencing the utilization of PMTCT service.....	9
Figure 2: Gender of the respondents.....	35
Figure 3: Age of the respondents.....	36
Figure 4: Level of education of the respondents.....	37
Figure 5: Showing Marital status.....	38
Figure 6: Nature of Marriage of respondent.....	39
Figure 7: Occupation of Respondent.....	40

## **LIST OF ACRONYMS**

<b>ANC</b>	Antenatal clinical
<b>ART</b>	Antiretroviral Therapy
<b>ARVs</b>	Antiretroviral drugs
<b>CVI</b>	Content Validity Index
<b>FP</b>	Family Planning
<b>HCT</b>	HIV Counseling and Testing
<b>HIV</b>	Human Immune Virus
<b>MOH</b>	Ministry of health
<b>MNRH</b>	Mulago National Referral Hospital
<b>PLWHA</b>	People Living With HIV/AIDs
<b>PMTCT</b>	Prevention of Mother to Child Transmission
<b>RH</b>	Reproductive Health
<b>STIs</b>	Sexually Transmitted Infections
<b>UDHS</b>	Uganda Demography Health Survey
<b>UNAIDs</b>	United Nations against HIV/AIDs
<b>UNICEF</b>	United Nations International Children Emergency Fund
<b>WHO</b>	World Health Organisation

## **ABSTRACT**

The general objective of the study was to examine the factors affecting utilization of PMTCT services in MRH. The study was guided by the following objectives: to establish the predisposing/ patient factors that influence the utilization of PMTCT services; to determine the enabling/socio-economic and cultural factors influencing the utilization of PMTCT services and to assess the influence of need/health system related factors on the utilization of PMTCT services in Mulago Referral Hospital. A cross sectional research design was used. The study predominantly employed a quantitative approach but also used a qualitative approach. The study population consisted of 178 participants. A sample size of 130 respondents was selected. A simple random technique was used for Mothers seeking PMTCT services in Mulago except for the Medical workers in ANC care and labour ward who were selected purposively. Quantitative data analysis mainly consisted of descriptive statistics (percentages) and inferential statistics (Spearman correlation coefficient and regression). Thematic and content analysis was used to analyze qualitative data. Findings revealed a significant positive influence (42%) of predisposing factors on utilization of PMTCT services in MRH. Socio-economic and cultural factors had a significant positive influence (64.8%) on utilization of PMTCT services. And health systems related factors had a positive influence on utilization of PMTCT services. It was concluded that predisposing, socio-economic and cultural and health systems related factors positively influence the utilization of PMTCT services in MRH.

It is recommended that MNRH need to ensure that mothers are counseled on the best PMTCT services they need and the hospital goes ahead to put in place enough space that can serve a bigger number of mother in a smallest period of time so as to overcome congestions that lead to underutilization of PMTCT services in Mulago Referral hospital.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Introduction**

This study investigated the factors that influence the utilization of prevention of mother to child transmission services with specific reference to Mulago National Referral Hospital in Uganda. In this study, factors influencing utilization was treated as the independent variable, whilst PMTCT services were treated as the dependent variable. Each of these variables was conceptualized as indicated in the conceptual framework Figure 1.1. This chapter thus presents the background to the study, statement of the problem, purpose of the study, objectives, research questions, hypotheses, conceptual framework, significance, justification, scope of the study, and operational definitions of terms.

### **1.2 Background of the study**

#### **1.2.1 Historical background**

Globally, it had been reported that each year 1.5 million women living with HIV get pregnant (WHO/UNAIDS/UNICEF, 2011) and without antiretroviral drugs (ARVs), there was a 15 to 45 percent chance that their children also become infected (WHO, 2010). This problem escalated so much in developing countries (UNAIDS, 2012). However, in high-income countries mother-to-child transmission had been almost completely eliminated as a result of effective voluntary testing and counseling services, access to antiretroviral therapy, safe delivery practices, and the widespread availability and safe use of breast-milk substitutes. Globally it was reported that since 1995, more than 350,000 children had avoided HIV infection due to these interventions (WHO,



2012). If these interventions were available and accessible to women worldwide, they could prevent thousands of children from becoming infected with HIV each year. In Africa, despite the presence of PMTCT services as recommended by WHO and UNAIDS, it is reported that in 2011, around 330,000 children under the age of 15 became infected with HIV and an estimated 230,000 died from AIDS (UNAIDS, 2012). Almost all of these infections were as a result of mother-to-child transmission and among children living in sub-Saharan Africa (WHO, 2012). There were a number of barriers and challenges facing the prevention of mother-to-child transmission. Many African countries still do not have enough PMTCT services and too many women live a long way from their nearest health clinic. The cost or unavailability of transport, as well as heavy workloads and other responsibilities, such as the care of children or other dependents, can further inhibit women from accessing PMTCT services.

In a study by World Health Organization (WHO 2012) showed that in Africa health systems were often poorly staffed and resourced and clinics struggled to provide existing services, let alone new ones. As a result of this limited capacity, many countries were unable to adapt their existing health systems according PMTCT guidelines, which were amended as new evidence became available and more cost-effective in the long-term. Therefore, many clinics were not providing HIV-infected women with the most effective drugs. One example of this was the use of single-dose nevirapine, an antiretroviral drug which, despite no longer recommended by the WHO and in 2011 were still being used in many countries for PMTCT; including Egypt, Malawi, Kenya and Uganda (UNAIDS 2011).

In Uganda, the government under the MOH recommended women to access and utilize PMTCT services which prevent pregnancy in its referral centers including Mulago Referral Hospital. This has however not been the case, according to Uganda Demographic health Survey (2011), despite the fact that many women in Uganda were aware of the PMTCT services, only few had gone ahead to utilize these services.

In this case therefore, PMTCT services in Mulago Referral Hospital had for a long time been reportedly not utilised by a big number of women and these had been attributed to a number of factors in form of demographic, predisposing, enabling and health system related factors (Uganda Demographic Health Survey, 2011).

### **1.2.2 Theoretical background**

The theory that guided this study was the Health Care Utilization Model also referred to as the generic behavioral model of Andersen (1968). Andersen in this model comes up with three major categories of health service utilization determinants. These include; predisposing factors, enabling factors and need factors. Therefore, his theory rests on the promise that people will utilize health services when the predisposing characteristics, enabling characteristics and need factors are favorable. Therefore, in this study, it is assumed that to utilize PMTCT services in Mulago Referral Hospital, it depends highly on predisposing factors, enabling/socio-economic and cultural factors and health care system related factors. The category of predisposing characteristics was used to reflect the fact that some mothers have a propensity to use services than others. The predisposing factors was used to investigate whether marital status, religion, past experiences and alternative sources of drugs for mothers in any ways influence their propensity to use PMTCT services. The need factors referred to the basic and direct stimulus for the use of

PMTCT services in the hospital. This means that the health services in the health center must be satisfying.

### **1.2.3 Conceptual background**

This study was based on two main variables; that was the factors that influence the utilization of PMTCT services. Factors for utilization of PMTCT services were conceptualized as independent variable and PMTCT services are conceptualized as depend variable. Factors that are influencing this study were defined as predisposing factors, enabling factors and health center related factors that allow the utilization of services (Anderson, 1968 and Okello, 2001). Therefore utilization was measured using predisposing, enabling and health system factors.

On the other hand, PMTCT services can be understood in bits. According to Oxford Advanced Learner's Dictionary (2005), a mother is the female parent of a child. A child is a young human who is not yet a healthy adult; may also be an unborn child (Oxford Advanced Learner's Dictionary, 2005). Transmission (transfer) is the act or process of passing something from one person, place or thing to another. It is also transmission of the disease or risk of transmission (Oxford Advanced Learner's Dictionary 2005). Mother-to-child transmission of HIV to a child from an HIV-infected woman during pregnancy, delivery, or breastfeeding indicates that the immediate source of the child's infection is the mother. The use of the term "mother-to-child" implies no blame, whether or not a woman is aware of her own infection status (Newell, 2004). In this study, PMTCT is conceptualized to mean family planning services, child protection services, STI/HIV information services, quality ante-natal care, counseling and HIV testing,

antiretroviral therapy, labor care, delivery care, postpartum care, adequate mother-child care services

#### **1.2.4 Contextual background**

The Ministry of Health in Uganda through referral hospitals particularly Mulago Referral Hospital is responsible for provision of PMTCT services to pregnant mothers. Since 2000, MOH under the PMTCT guidelines of WHO and UNAIDS started to provide PMTCT services including family planning services, child protection services, STI/HIV information services, quality ante-natal care, counseling and HIV testing, antiretroviral therapy, labor care, delivery care, postpartum care, adequate mother-child care services as recommended. It was expected that by putting in place such services in Mulago referral hospital, the HIV/AIDS transmission of mother to child will reduce but according to (MOH, 2010 and UDHS, 2011), it is estimated that over 915,400 children are living with HIV/AIDS in 2010 and 87% of these children are contracting the disease from their mothers. The Ministry of Health estimated 132,500 new infections in 2011 alone.

Another study carried out by the Ministry of Health in 2012 showed that HIV prevalence among children contracting HIV from their mothers is rising. The existing dismay however, is that the presence of PMTCT services in Mulago referral hospital has not been utilized into reducing the rate of mother-to-child HIV prevention. It appears that the PMTCT service utilization in Mulago referral hospital was still being queried.

### **1.3 Statement of the problem**

The government of Uganda under the MOH recommended HIV positive women to access and utilize PMTCT services in its referral centers including Mulago National Referral Hospital. (Uganda Demographic Health Survey, 2011). In 2010, Uganda developed a PMTCT scale up plan (2010-2015) and adopted WHO 2010 Guidelines Option A regimen for prophylaxis (Republic of Uganda, 2010). The Ugandan Ministry of Health (MOH) again in September 2012 decided to adopt and roll out the World Health Organization (WHO) guideline for the prevention of mother-to-child transmission (PMTCT) Option B+, which calls for all HIV-infected pregnant women to be put on antiretroviral therapy (ART) for life. This was regarded by WHO to be a more effective strategy to achieve the UNAIDS' target of virtual elimination by 2015 compared to previous guidelines (Namara-Lugolobi et al. 2013). Mulago National Referral Hospital as the main hospital in Uganda was mandated to provide PMTCT services in form of antenatal care, family planning services, child protection services, STI/HIV information services, quality ante-natal care, counseling and HIV testing, regimens of antiretroviral therapy, labor care, delivery care, adequate mother-child care services (Onyango, 2010). The Mulago PMTCT Programme rolled out Option B+ on 17th Oct in the ANC and on 25th Oct 2012 in labour wards. Despite the fact that many women in Uganda were aware about the PMTCT services, only few had gone ahead to utilize these services even some who registered, they later disappeared, for example, about 20% and 70% of women initiated on ART in ANC and Labour wards respectively in Mulago Hospital were lost to follow up after the initial visit (Namara-Lugolobi et al. 2013). In addition, a study done in PMTCT program Mulago showed that 190(7.8%) of positive counselled pregnant

mothers for option B+ initiation refused to be initiated in the program (Namale, J, Matovu, 2012). This implied that PMTCT services in Mulago had not been fully utilized and therefore transmission of HIV from mothers to children would increase. For that matter, the researcher endeavored to undertake a study and investigated the factors influencing the utilization of PMTCT services in Mulago National Referral Hospital.

#### **1.4 Purpose of the study**

The purpose of the study was to investigate the factors influencing the utilization of PMTCT services in Mulago Referral Hospital

#### **1.5 Objectives of the study**

- i) To establish the patient factors that influencing the utilization of PMTCT services.
- ii) To determine the enabling factors influencing the utilization of PMTCT services
- iii) To assess the influence of health system related factors on the utilization of PMTCT services in Mulago Referral Hospital.

#### **1.6 Research questions**

- i) What are the patient factors influencing the utilization of PMTCT services in Mulago Referral Hospital?
- ii) What are the enabling factors influencing the utilization of PMTCT services in Mulago Referral Hospital?
- iii) What are health systems related factors influencing the utilization of PMTCT services in Mulago Referral Hospital?

## **1.7 Research hypotheses**

- i) Predisposing/patient factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital
  - ii) Enabling factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital
  - iii) Health system related factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital
- 1.8 Conceptual framework.





A conceptual framework depicted in Figure 1.1 shows that there is a relationship between utilization factors, client choices factors and PMTCT service. It was conceptualized that utilisation factors can operationally be defined as patient, socio-economic and cultural and health system related and client choices was conceptualized as follows: taking HCT, receiving HIV test results taking ART therapy. PMTCT services can be measured by availability of, Quality ante-natal care; and Labor and Delivery care. The moderating variable was not measured in this study. The study therefore, focused on factors that influence ANC and intrapartum services.

### **1.9 Significance of the study**

The study may be important in highlighting factors that determine the utilization of PMTCT services and these factors may serve as a building block for policy makers when they are drafting health related policies. The study may also serve an important function for informing Mulago Referral hospital about the lessons learnt from their services for improvement but also about factors that hinder mothers to seek their services when pregnant. The study may also hopefully generate additional information beside the existing literature on PMTCT service utilization by mothers.

### **1.10 Justification of the study**

Prior studies that had been done in this field had been limited to factors influencing contraceptive use and these are basically global based. However, there wasn't been a study conducted on factors influencing the utilization of PMTCT services in Uganda specifically in Mulago referral hospital. Thus, the rationale behind the choice of this

study is to empirically establish the factors influencing the utilization of PMTCT services in Mulago referral hospital. The researcher therefore felt the need to carry out a research in order to investigate the factors influencing the utilization of PMTCT services in Mulago Referral Hospital to understand the linkage between the aforementioned dimensions of factors for utilization and PMTCT services. The result of this study is hoped to contribute positively to the field of institutional management and health service delivery.

### **1.11 Scope of the study:**

#### **1.11.1 Geographical scope**

Geographically, the study was held at Mulago National Referral Hospital, Kawempe Division, Kampala. The hospital is located on Mulago Hill in the northern part of the city of Kampala, Kawempe Division, ½ Km from the city Centre. The Hospital is divided into two Upper and Lower Mulago serving the urban rich and poor. The bed capacity for both Upper and Lower Mulago are 250 and 540 respectively. The study was restricted to investigating utilization factors associated with PMTCT Services among mothers attending ANC in Mulago National Referral Hospital, Kawempe Division, Kampala.

#### **1.11.2 Content scope**

The study was limited to factors influencing the utilization of PMTCT services. Factors for Utilization of PMTCT services are the independent variable and PMTCT services is the dependent variable. Therefore, Factors that influence utilization of PMTCT services in this study refers to Patient factors, socioeconomic factors and health center related factors while PMTCT services were limited to, quality ante-natal care and; labor and delivery care services.

### **1.11.3 Time scope**

The study was conducted from January to November, 2014. This period was chosen because that was when Uganda developed a PMTCT scale up plan (2010-2015) and adopted WHO 2012 Guidelines Option B+ regimen for prophylaxis (USAID, Uganda, 2013).

### **1.12 Operational definitions**

**Patient factors:** In this study, these referred to those factors that make some mothers to have a propensity to use services than other individuals.

**Socio-economic and cultural factors:** In this study, these referred to those factors that determine the utilization among mothers despite the fact that they are predisposed and aware of the PMTCT services.

**Health system related factors:** These referred to those factors that determine the utilization of PMTCT services within the health system.

**Prevention of Mother To Child Transmission services:** these referred to services that are offered by Mulago Referral hospital to prevent Mother-to-child HIV transmission

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction:**

This chapter reviewed the literature related to factors that influence the utilization of PMTCT services. The review was conceptualized under the objectives of the study and focused primarily on predisposing factors, enabling factors and health system related factors and their influence on utilization of PMTCT services. These were considered the pillars of the study.

#### **2.2 Theoretical framework:**

The theoretical framework for this study was derived from the Health Care Utilization Model also referred to as the generic behavioral model of Andersen (1968). Andersen in this model comes up with three major categories of health service utilization determinants. These include; predisposing factors, enabling factors and need factors. The category of predisposing characteristics were used to reflect the fact that some individuals have a propensity to use services than other individuals. These characteristics included perceptions, attitudes, and knowledge beliefs about the illness. The enabling factors reflect the fact that while the individual are predisposed and aware of the PMTCT services, she may not use them. Enabling factors included; the income, male involvement, education, and access to services. The need factors referred to the basic and direct stimulus for the use of PMTCT services in the area. The mother must perceive some need for use of PMTCT services. This depends on perception, knowledge, attitudes, beliefs and perceptions of mothers. The concept of predisposing characteristics was used to assess the influence of predisposing factors on utilization of PMTCT services.

Enabling factors were used to investigate whether mothers have enough income, educated and involve their husbands in utilizing these services.

The concept of need factors was used to investigate whether the Health system of Mulago Referral Hospital is capable providing PMTCT services to mothers.

### **2.3.1 Predisposing/Patient factors and utilization of PMTCT services:**

In a study carried out by Mumcu et al, (2004) ascertained that predisposing factors were among the major contributing factors on utilization of PMTCT services. In the same study, it showed that the age of an expectant mother determined the seeking of PMTCT services because of the fear and stigma attached to adolescent pregnancy from the community. In addition, Nakazzi (2002) found that young teens did not seek medical help because of insufficient resources to meet the health provider's fee and transportation costs. On the contrary, Rob et al. (2007), in their study showed that younger age especially age group (20-29) years was more likely to be associated with use of modern contraceptives compared to age group (40–49) years. On the other hand, Utomo et al. (1983), in their study showed that older age was one of the four major independent factors associated with the use and nonuse of contraception. Hence, there is some inconsistency regarding the relation between the age of an expectant mother and the seeking of PMTCT services.

Although Agyei and Migadde(1995), Feldman and Maposhere (2003), Utomo et al. 1983), showed that higher contraceptive use was associated with a higher number of surviving children and women with several children who wanted to avoid further pregnancies, Todd et al. (2008) in their study reported that contraceptive use was independently associated with having a greater number of living children. Feldman and

Maposhere(2003), showed that contraceptive and condom use increased markedly after HIV diagnosis, especially among those who were attending support groups.

In a Cameroon study, results showed that fertility rates were lower in HIV-Positive women compared to their HIV-Negative counterparts. The overall fertility rate for HIV positive women was 118.7 births per 1000 woman compared to 171.3 births per 1000 woman for HIV negative

women. The ratio of the fertility rate in HIV positive women to the fertility rate of HIV negative women was 0.69 (Eugene and Wiysonge 2008).

Gray et al. (1998), in their study showed that pregnancy prevalence was greatly reduced in HIV--infected women, owing to lower rates of conception. The prevalence of pregnancy was low both in HIV infected women without symptoms and in women with symptoms of HIV associated disease. Fertility rates were an indirect measure of PMTCT service prevalence, the low fertility rates observed in HIV-positive women in the above two studies were an indicator of contraceptive decisions being made or contraceptives of one form or the other being used. Homsy et al. (2009) in their study showed that pregnancy incidence increased from 3.46 per 100 women to 9.5 per 100 and that was due to improvements in quality of HIV care coupled with the reduction in stigma in many communities among PLWHA and consequently inconsistent use of PMTCT methods (FHI, 2008).

A study about knowledge as an important predictor of PMTCT use among young people irrespective of their HIV status showed that condom knowledge at logistic regression was associated with a 33% increased use of condoms (OR = 1.33) among both male and female participants (Ryan et al., 2007). In another study on contraceptive use in women enrolled into preventive HIV vaccine trials reported insufficient knowledge of certain methods to be among the reasons for not using contraception and that misconceptions related to FP methods and their incorrect use might have led to inconsistent use resulting in undesired pregnancies (Kibuuka et al., 2009).

Another survey conducted in 14 countries among 7000 women irrespective of their HIV status between 14-40 years showed that knowledge gap in FP methods restricts women's contraceptive choices and hence use, and that women fail to take advantage of PMTCT services due to lack of knowledge and stay with the familiar options (Rossella, 2006).

There is association between monogamy and non-utilization of contraception. However, women in polygamous marriages were more likely not to use contraception when they were older than 35 years, had 4 or more living children, had no male child, had 3 or more female children, or lived in rural areas. There is also association between non-utilization of contraception and number of male children (Audu, S et al, 2006). Fewer or none at all of male children will lead to none utilisation condoms because one is steal searching for the male child. In a study by Degni et al., showed that for religious reasons, most (63%) men avoided using condoms and were opposed to women's contraceptive use.

In the above literature therefore, it was observed that most of the emphasis had been put on contraceptives and there is generally few information directly on PMTCT services. Therefore, this study was to undertake a study to fill this gap by investigating the predisposing factors to utilization of PMTCT services in Mulago Referral Hospital which were entirely not addressed in the literature reviewed.

### **2.3.2 Socio-economic and cultural factors and the utilization of PMTCT services.**

Enabling factors refer to attributes specific to the individual or the community such as level of income, employment, ability to pay for services and individual access to regular source of care. In a study by Kikwilu et al, (2008), suggested that less than half of the study population could not use PMTCT services due to inability to pay. In addition, Wamala et al. ( 2006) in his study reported that socioeconomic disparities affected access and utilization of PMTCT services increasing the disease burden. Similarly Ahlberg et al.( 1996) and Ikebe, et al. (2002) found out that the availability of payment schemes other than out of pocket expenditures had been associated with increased access to and utilization of PMTCT services including preventive PMTCT services. PMTCT health education too positively influenced utilization of PMTCT services (Edelstein, 2002) .

Krista (2002) in his study reported that educational levels had an influence on the woman's health seeking behavior and therefore those that had continuously been educated about the importance of going to the health facility when they were pregnant and its importance would always try to access medical services. This meant that once they delivered from a health facility the chances that a woman would be exposed to the



various methods of family planning by the health service provider were high. In addition, Hagen et al. (1999) reported a strong trend toward declining fertility and increasing utilization of contraceptives among relatively well-educated, middle-class population.

Furthermore, another study (Utomo et al., 1983), showed that current users of contraceptives were more educated or had spouses who were more educated than their counterparts. Similarly, (Rob et al. 2007) in their study in six countries reported that secondary or higher educational attainment was more likely to be associated with increased use of modern contraceptives in all the six countries. Hence, there is consistency regarding the relationship between the education of an expectant mother and the seeking of PMTCT services.

According to Raiford et al,(2007),reported that women with HIV were more likely to use condoms if they had high partner communication self-efficacy and also reported low partner-related barriers to condom use. Similarly, Robet, al. (2007), in his study showed that partner approval was more likely to be associated with the of use of modern contraceptive in all the six countries that included Kenya, Malawi, Tanzania, Ivory Coast, Burkina Faso, and Ghana

In another study by Wolff et al, (2000), partner opposition was found to cause a statistically significant increase in unmet need accounting for as much as 20 percent of unmet need reported by women and a shift in contraceptive use favoring traditional methods over modern methods.

In addition, Ntabona (2002) reported that men's involvement was a major factor for utilization of PMTCT services. Men's involvement was dependent on the socio-cultural context and there were as yet no clear-cut guidelines on how far the partner/husband's participation could go. According to Lee (1999), in his study reported the following as part of men's participation: attending women's health education sessions; attending counseling sessions; using condoms; acting as community-based volunteer and for Rutenberg et al (2002:29-30), men's involvement meant that men would choose to come to the clinic with their partners, be counseled and get tested for HIV, support their partners in coping with HIV infection and support them financially or with transport to the clinic. In their study, De Cock, Fowler, Mercier, De Vincenzi, Saba, Hoff, Alnwick, Rodgers & Shaffer (2000), the focus of involvement of men in MTCT would be on their readiness to provide support, or their support to their female partners in core PMTCT interventions which included counseling and testing, use of prophylactic antiretroviral drugs and choice of baby's feeding options. They further reported that men involvement would then be assessed by; men's readiness to be counseled and tested or actually having been counseled and tested for HIV together with the female partner in a PMTCT setting, men's readiness to offer support or their actual support of female partner in taking ARVs and adhering to them, men's readiness to support or actual support of female partner in the choice of infant feeding option.

Therefore, there is consistency regarding the relationship between male involvement of an expectant mother and the seeking of PMTCT services.

According to Tsui and Stephenson (2002), it was important to look beyond individual factors when examining PMTCT use or non-use. Srikanthan and Reid (2008), reported that cultural norms and expectations were varied and included among others; fatalism attributed to HIV disease, fear of infecting the unborn child, gender roles designated by society such as the role of women in child bearing and the demand for bigger families.

Furthermore Sukati and Shabangu (2006), in their study showed that, cultural expectations override individual factors such as knowledge about ones HIV Sero-positivity for example pressure from in-laws forces HIV positive women to have children despite their status, the desire to portray “femininity” and fulfill womanhood also contribute. Often culture shapes perceptions of the individuals belonging to that culture on matters of fertility including contraceptive use. In addition, Sennen et al., (2005) in their study showed that condoms use during the last occasional intercourse was only 36.8% of males and 47.5% of females. Failure to use condom was related to its perceived lack of efficacy and perceived quality. In conclusion, there was a relationship between cultural norms and utilisation of PMTCT services.

Although MacPhail et al., (2007), argued that there was evidence of association between contraceptive use and being employed or a student vs. unemployed; fewer sex partners; type of last sex partner; having talked to last partner about condom use and having ever been pregnant, Sennen et al., (2005) found that contraceptive use among adolescent women was significantly associated with both employment and educational status. Interestingly, women were more likely to use contraception when reporting a single partner in the last 12 months, when reporting a main partner and when reporting increased sexual activity in the past month. This indicated that young women were

considering the use of contraceptives only once they got involved in long-term, regular relationships. There remains, however, a need to offer contraceptive services to young women who are intermittently sexually active in less stable types of relationships.

Therefore, despite the fact that literature indicated a good number of enabling factors for utilization of PMTCT services but most of these factors cannot be entirely believed without undertaking an empirical testing of most of them in the area of study which seems to be ignored by most of the prior researchers. Therefore, this study sought to fill that gap by undertaking a study in Mulago among mothers to empirically verify the above literature.

### **2.3.3 Health system related factors and the utilization of PMTCT services**

These are factors that are responsible for the utilization of PMTCT services from the perspective of the service provider at the level of the health facility. These include factors such as geographical and financial access to PMTCT services and care. Availability of the various types of PMTCT services as provided by the doctors such as family planning services, child protection services, STI/HIV information services, quality ante-natal care, counseling and HIV testing, antiretroviral therapy, labor care, delivery care, postpartum care, adequate mother-child care services especially in public facilities, average cost of PMTCT services and use of alternative methods of PMTCT services.

Christensen, et al.( 2002) reported that the use of PMTCT services had been more commonly associated with public than the private health service delivery systems. Furthermore,Postma, (1984) said that in Denmark, more than half of the urban poor preferred the public PMTCT facilities over the private facilities due to the low cost.

Kikwilu and Hiza,( 1997) also said that some of the alternative methods of PMTCT services considered included self-medication with drugs and herbs as well as traditional healers. In addition health services and in particular private FP service delivery play a big role in sexual and reproductive health behaviors, outcomes of risk perception and in this regard use of FP by PLWHA.

In one study, results showed that the proximity of a private health facility in urban areas which reflected increased availability of FP methods was positively associated with current use as there was the presence of a higher number trained FP service providers (Katende et al., 2003). Furthermore, Brouet al., (2009) in his study indicated that FP counseling and regular follow-up was accompanied by a high rate of contraceptive use and a low pregnancy incidence among PLWHA after deliver.

A study in Rakai by Lutalo et al., (2000), found that using trained volunteers and social marketing of contraceptives could improve contraceptive uptake among PLWHA. However, Marissa Maier et al,( 2008), reported that ART uptake was associated with an increase in fertility desire as women with HIV and on ART felt healthy and therefore felt that they could have a normal healthy life thus the increase in the fertility desire, hence increase in pregnancy rates especially for women who wished to have children. However, in another study by Westhoff, S. et al, 2007), reported that women had fears of using contraceptives because of the side effects associated with the different methods. Nearly 60% of subjects discontinued the oral contraceptives by 6 months. Most subjects reported no changes in headaches, weight, moodiness, and sexual satisfaction during the first 3 months of OC use. Subjects with any complaints, especially those with increased headaches or moodiness, were more likely to discontinue the OC prematurely. Side

effects were absent or mild among most OC users, but women with complaints are more likely to discontinue. However a study carried out amongst young people in Universities in Uganda found that after controlling for education and ever use of contraceptives, having worries increased the likelihood of having side effects (Byamugisha, 2007). This could mean that women who were HIV positive had more worries which probably predisposed them to experiencing certain side effects. In this literature, it is clearly showed that it was done generally on all health centers and despite the fact that it tries to identify some of the variables for this study, some of them are neglected. Therefore, this study was conducted to empirically test the factors reviewed in this literature and also go ahead to investigate the existence of other health system related factors particularly in Mulago referral Hospital.

#### **2.4 Summary of the literature review**

The literature reviewed clearly indicated that there were a number of studies in place that had viably established the factors influencing the utilization of PMTCT services in the world, Africa and some in Uganda. However, the literature reviewed was reportedly done in previous years of 2010 and below. Currently, we are in 2015 and new developments had come up, new PMTCT services have also come up which call for a study like this to try to empirically test the literature reviewed and weigh the utilization of these services in place.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This chapter indicated how data for the study would be collected, analyzed and interpreted in order to answer the research questions or test the research hypotheses, thereby meeting the purpose of this study. This chapter therefore comprises of research design, study population, determination of sample size, sampling techniques, data collection methods, data collection instruments, quality control, data collection procedures, data analysis, measurement of variables, and ethical considerations.

#### **3.2 Research Design**

This study used a cross sectional research design. A cross sectional research design was used to enable the researcher to undertake a study in a specified period of time using particular segments of respondents (Sekaran, 2003). This type of research design was selected as ideal for this research because the study intends to identify factors influencing the variables. In this study, numerical figures and descriptive information was obtained, giving it both a quantitative and qualitative research dimension. The study hence used both qualitative and quantitative approaches during sampling, data collection, quality control, and analysis. At data collection stage, qualitative design involved administering open ended interview and questionnaire questions to the respondents, whilst the quantitative design involved administering closed ended interview and questionnaire questions to respondents in Mulago Referral Hospital.

### 3.3 Study Population

This study was conducted in Mulago National Referral Hospital. The study population consisted of 178 respondents (Mulago Referral Hospital, 2013). These consisted of 30 medical workers in PMTCT services and 148 mothers seeking PMTCT services. The mothers and health workers population was determined using the attendance from the previous three (3) months as the study was also going to take three (3) months. The medical workers were chosen because they had the responsibility of providing PMTCT services to mothers like counseling, testing and labor services as well as putting in place a conducive environment for mothers. The Mothers were chosen in this study because they were the very people whom this study endeavored to assess in understanding factors inhibiting their utilization.

### 3.4 Determination of the Sample Size

The sample size was determined using the table in Appendix C from a study by Morgan and Krejcie (Amin, 2005). This therefore meant that the sample included 120 mothers.

The sample sizes are depicted in Table 3.1.

**Table 1: Sample Size of Respondents and Sampling Technique**

Category of Population	Population Size	Sample Size	Sampling Technique
Doctors.	3	3	Purposive sampling
Midwives.	5	4	Purposive sampling
Counsellors.	5	3	Purposive sampling
PMTCT Mothers under ANC	100	80	Simple Random sampling
PMTCT Mothers under intrapartum care	48	40	Simple Random sampling
<b>Total</b>	<b>178</b>	<b>130</b>	



*Source: Mulago referral hospital record (2013)*

From Table 1, it can be observed that the researcher worked with a sample size of 130 respondents using a blend of purposive and simple random sampling techniques.

### **3.5 Sampling Techniques**

#### **3.5.1 Probabilistic Sampling Techniques**

From the existing probabilistic sampling techniques, the study used simple random sampling technique. Simple random sampling was used to select mothers seeking PMTCT services in Mulago referral Hospital. This technique was chosen because the category of mothers had a large population size and as such warranted simple random sampling to minimize sampling bias (Mugenda & Mugenda, 2003).

#### **3.5.2 Non-probabilistic Sampling Techniques**

From the existing non-probabilistic sampling techniques, purposive sampling was employed to select medical workers in PMTCT services in Mulago referral Hospital who were targeted due to their perceived knowledge arising out of known experience that they have. This technique was employed following the postulate that if sampling has to be done from smaller groups of key informants, there is need to collect very informative data, and thus the researcher needs to select the sample purposively at one's own discretion (Sekaran, 2003).

### **3.6 Data Collection Methods**

#### **3.6.1 Questionnaire Survey**

This was used to collect primary data from mothers, and, it involved use of a semi-structured questionnaire depicted in Appendix A. The method of survey using a semi-

structured questionnaire was deemed appropriate since part of the questionnaire offers the mothers a choice of picking their answers from a given set of alternatives while the other part of the questionnaire allows them to qualify their responses (Amin, 2005).

### **3.6.2 Interview**

This was used to collect primary data from Medical workers. It involved use of a semi-structured interview guide depicted in Appendix B. The method of interview using a semi-structured interview guide was deemed appropriate since the aforementioned categories of staff had vital information yet no time to fill in questionnaires (Sekaran, 2003).

### **3.6.3 Documentary Review**

This was used to collect secondary data and was guided by a documentary review checklist. Documents from Mulago referral Hospital, public and private libraries with literature relevant to the research topic was analyzed as secondary sources of data to supplement primary data from survey and interviews (Amin, 2005).

## **3.7 Data Collection Instruments**

### **3.7.1 Questionnaire**

Questionnaires were used to collect data from the Mothers seeking PMTCT services in Mulago referral Hospital. The questionnaire (Appendix I) was used in this case because it had proved to be a valuable method of collecting a wide range of information from a large number of individuals especially when it comes to people like the mothers (Sekaran, 2003). The questionnaires were popular because the respondents filled them in

at their own convenience and are appropriate for large samples. The questionnaire was designed with both open and closed ended questions (Amin, 2005).

### **3.7.2 Interview guide**

The researcher prepared and used a semi-structured interview guide to conduct interviews with medical workers in PMTCT services at Mulago referral Hospital. Interviews were chosen because they were thought to provide in-depth information about a particular research issue or question. Still, interviews were chosen because they make it easy to fully understand one's impressions or experiences, or learn more about their answers as compared to questionnaires. According to Mugenda and Mugenda (2003), interviews are advantageous in that they provide in-depth data which is not possible to get using questionnaires.

### **3.7.3 Documentary Review Checklist**

This consisted of a list of documents (Sekaran, 2003) particularly concerning utilization of PMTCT services which are directly relevant. Most of these documents were obtained from public libraries and the Mulago referral Hospital. In this case; textbooks, journals, magazines, theses, conference papers, newspaper articles, government reports, internet, and dissertations related to the topic under investigation as recommended by Amin (2005) were reviewed.

## **3.8 Quality control**

### **3.8.1 Validity**

The validity of the questionnaires was established using the content validity test. Using the ratings, the content validity indices were computed. The Cronbach Alpha method of internal consistency was used to compute the reliability of the measures of the variables

of the study using various questionnaire items administered to respondents (Kothari, 1990).

**Table .2 Content Validity Indices for the Questionnaire**

<b>Variable</b>	<b>Description</b>	<b>No. of Items</b>	<b>Content validity index</b>
Independent	Predisposing factors	11	.788
	Socio-economic and cultural factors	10	.761
	Health systems related factors	9	0.78
Dependent	PMCTC services	10	.0743

*Source: Primary data*

According to Content validity Index, the questionnaire was considered valid since all the coefficients in Table 2 were above 0.7 which is the least recommended CVI in survey studies (Amin, 2004; Gay, 1996 ).

### **3.8.2 Reliability**

Gay (1996) defined reliability as the degree of consistency that the instrument demonstrates. After pilot testing in the field, reliability of the instrument on multi-item variables (i.e. factors affecting utilisation) was tested via the Cronbach Alpha Method provided by Statistical Package for the Social Scientists (Foster, 1998). The researcher used this method because it was expected that some items or questions would have several possible answers. The researcher established reliability of the questionnaires by computing the alpha coefficient of the items (questions) that constituted the dependent

variable and that of the items that constituted the independent variable. The results were as on Table 4:

**Table 3: Reliability indices for the respective sections of the questionnaire**

<b>Variable</b>	<b>Description</b>	<b>No. of Items</b>	<b>Cronbach alpha</b>
Independent	Predisposing factors	11	.831
	Socio-economic and cultural factors	10	.767
	Health systems related factors	9	.761
Dependent	PMCTC services	10	.767

According to Cronbach Alpha Coefficient Test (Cronbach, 1971), the questionnaire was considered reliable since all the coefficients in Table 4 were above 0.7 which is the least recommended Cronbach Alpha Coefficient in survey studies (Amin, 2004; Gay, 1996 ).

### **3.9 Data Collection Procedures**

The researcher obtained a letter from Uganda Management Institute introducing her to the Mulago referral Hospital and specifying that the data to be collected was solely for study purposes. Upon obtaining the requisite permission, the researcher proceeded with data collection starting with giving out questionnaires to mothers seeking PMTCT services in Mulago referral Hospital. After that, interviews were conducted with medical workers for PMTCT services in Mulago referral Hospital.

### **3.10 Data Analysis**

Data was analyzed both quantitatively and qualitatively.

#### **3.10.1 Quantitative data analysis**

Quantitative data analysis involved use of both descriptive and inferential statistics in the Statistical Package for Social Scientists (SPSS). Descriptive statistics entailed determination of measures of central tendency such as mean, mode, median; measures of dispersion such as range, variance, standard deviation; frequency distributions; and percentages. Data was processed by editing, coding, entering, and then presented in comprehensive tables showing the responses of each category of variables. Inferential statistics included correlation analysis using a correlation coefficient and regression analysis using a regression coefficient in order to answer the research questions.

According to Sekaran (2003), a correlation study is most appropriate to conduct the study in the natural environment of an organization with minimum interference by the researcher and no manipulation. A correlation coefficient was computed because the study entailed determining correlations or describing the association between two variables (Oso&Onen, 2008). At bivariate level, factors influencing utilization as an independent variable was correlated with PMTCT services as the dependent variable using Spearman's Correlation Coefficient.

#### **3.10.2 Qualitative data analysis**

Qualitative data analysis involved both thematic and content analysis, and was based on how the findings related to the research questions. Content analysis was used to edit qualitative data and reorganize it into meaningful shorter sentences. Thematic analysis

was used to organize data into themes and codes were identified (Sekaran, 2003). After data collection, information of same category was assembled together and their similarity with the quantitative data created, after which a report was written. Qualitative data was interpreted by composing explanations or descriptions from the information. The qualitative data was illustrated and substantiated by quotation or descriptions.

### **3.11 Measurement of Variables**

Mugenda and Mugenda (2003) support the use of nominal, ordinal, and Likert type rating scales during questionnaire design and measurement of variables. The nominal scale was used to measure such variables as gender and terms of employment, among others. The ordinal scale was employed to measure such variables as age, level of education, years of experience, among others. The five point Likert type scale (1- strongly disagree, 2- disagree, 3-not sure, 4- agree and 5-Strongly agree) was used to measure the independent variable (factors influencing utilization) and the dependent variable (PMTCT services). The choice of this scale of measurement was that each point on the scale carried a numerical score which was used to measure the respondent's attitude and it was the most frequently used summated scale in the study of social attitude. According to Mugenda (2003) and Amin (2005), the Likert scale is able to measure perceptions, attitudes, values and behaviors of individuals towards a given phenomenon.

### **3.12 Ethical considerations**

The major ethical problem faced in this study was the privacy of the subjects and confidentiality of their information. To ensure privacy, the subjects were informed upfront that indeed their names were not required, that they had the right to leave

questions unanswered for which they do not wish to offer the requisite information, and that the researcher was not putting the respondent under pressure if that happened (Mugenda & Mugenda, 2003). To ensure confidentiality, the subjects were informed upfront that the information they give was solely used for academic purposes and data obtained on private matters was treated in confidence (Amin, 2005).



## CHAPTER FOUR

### PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

#### 4.1 Introduction

This chapter presents findings of the study which was conducted about factors that influence the utilization of prevention of mother to child transmission services in Mulago National Referral Hospital, Uganda. The findings were presented according to the objectives of the study. In the first section, the social background of the respondents was given. In the second section, the study findings were analyzed (that was findings on predisposing factors, socio-economic and cultural factors health care system related factors and utilization of PMTCT services in MRH) and the last section handles the correlation results. The response rate in the whole study was explained in table 4 below;

#### 4.2 Response rate.

**Table 4: showing the response rate**

<b>Respondents</b>	<b>Sample size</b>	<b>Frequency</b>	<b>Percentage</b>
Medical workers in ANC care	10	10	100%
Mothers seeking PMTCT services in Mulago	120	114	87.7%
<b>Total</b>	<b>130</b>	<b>124</b>	<b>95.3%</b>

Table 4 above indicates that out of the 130 respondents that were set for the study for investigation, 124 were able to respond to the study. The remaining 6 couldn't be reached because some of them couldn't attend to the researcher in the specified time as some of them had transferred to other parts of the country and some of them wrongly filled the

questionnaire. However, according to Amin (2005), 70% of the respondents are enough to represent the sample size set for the study. Therefore this means that 95.3% response rate was above accepted rate and enough for this study.

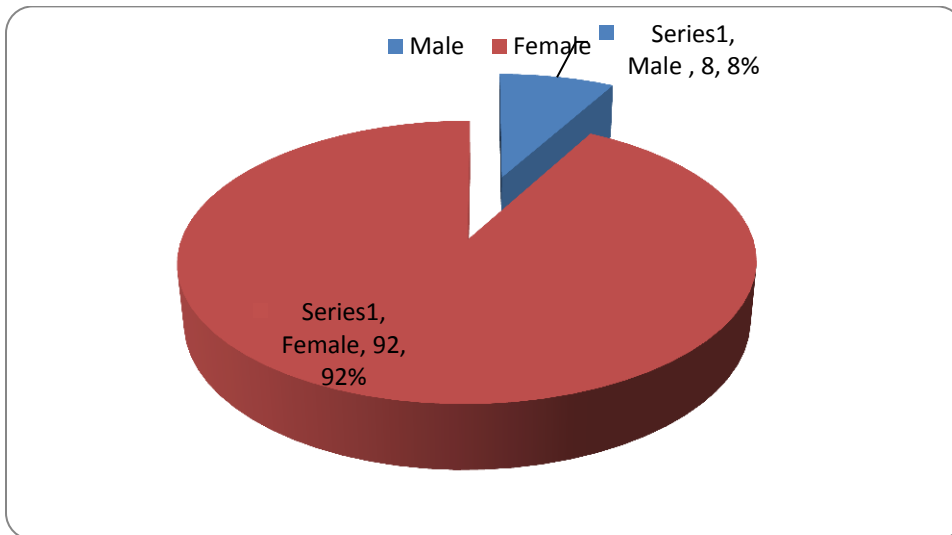
### 4.3 Background of the Respondents

This theme handles the background information on the respondents that were used in the study. Among these characteristics included; gender, age, level of education, marital status, nature of marriage, occupation, religion of the respondents in MNRH.

#### 4.3.1 Gender of the respondents

To understand the gender of the respondents, the researcher recorded their gender and below is the results that were recorded in figure 1.

**Figure 2: Gender of the respondents**



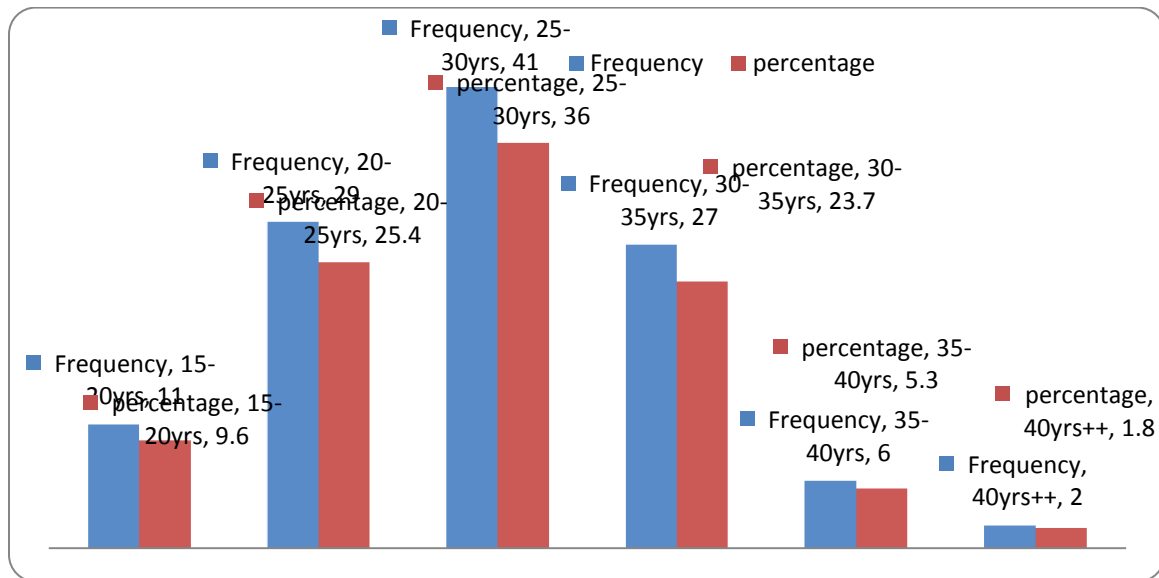
From figure 2, it is indicated that the study was conducted mainly from the female respondents who constituted 92%. Males on the other hand, were represented by 8% of the respondents. This implies that the study was done in the very sex that it targeted since

they were the people who had to utilise PMTCT services. In addition, this showed that men were also less physically involved in the PMTCT services.

### 4.3.2 Age of the Respondents

To establish the age of the respondents, respondents were asked to state their ages and below are the results that were recorded in figure 2.

**Figure 3: Age of the respondents**



From figure 3, it was found out that most of the respondents had 25-30 years and these took the highest toll of 36%. Those who were in the category of 20-25 constituted 25.4%, those who were between 30-35 years had 23.7%, 9.6 had 15-20 years, 5.3% had 35-40 years and 1.8% had 40 years and above. The above statistics tell us that the study was conducted mostly in the people who were 20 years and above. These categories of years are associated and susceptible to have enough experience of what is exactly happening as far as the study is concerned and were in the reproductive age.

### 4.3.3 Level of Education of the Respondents

Respondents were also asked to state their level of education and most of them indicated that they had a secondary level of education as shown in figure 3 in details below.

**Figure 4: Level of education of the respondents**

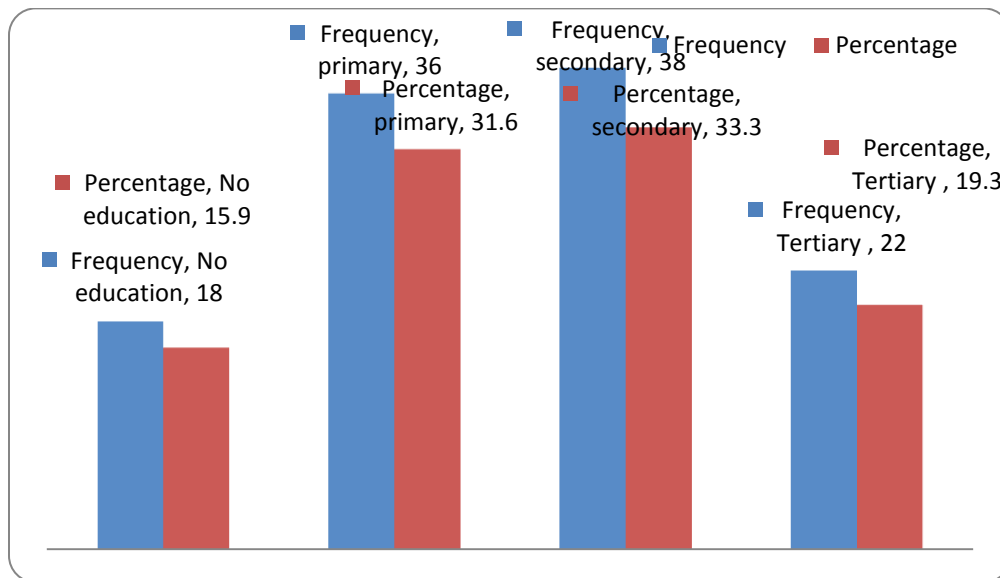


Figure 4 indicates that most of the respondents had attained a secondary education and these constituted 33.3%. Those who had attained primary education came second with 31.6% of the respondents. 19.3% of the respondents had tertiary education and last category which had no education had 15.9%. Basing on the above findings, most of the respondents had primary and secondary education; this means that the findings of the study were based on the people who had equivalent knowledge on frequent utilisation of PMTCT services.

### 4.3.4 Marital Status of respondent

Respondents were also asked to state their marital status and their responses were what figure 4 indicates below.

**Figure 5: Showing Marital status**

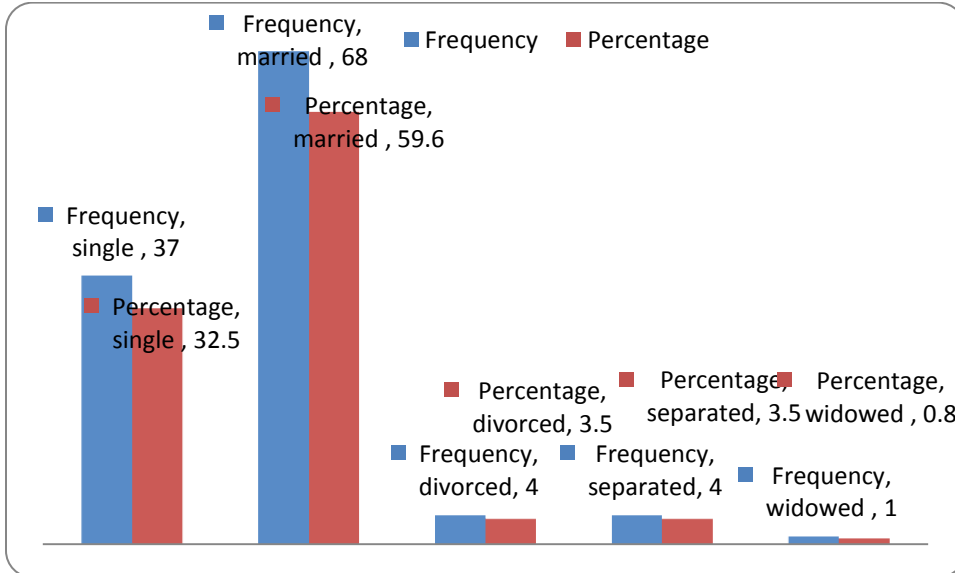


Figure 5 above indicates that most of the respondents were married and these constituted 59.6%, 32.5% were single, 3.5% had divorced and separated. And the least group was widowed. This therefore, means that the study was based on mothers who had frequently been using PMTCT services and their responses can be relied on.

#### **4.3.5 Nature of Marriage of respondent**

Those who had indicated that they were married; they were further asked to state the status or nature of their marriage. Figure 5 has more details.

**Figure 6: Nature of Marriage of respondent**

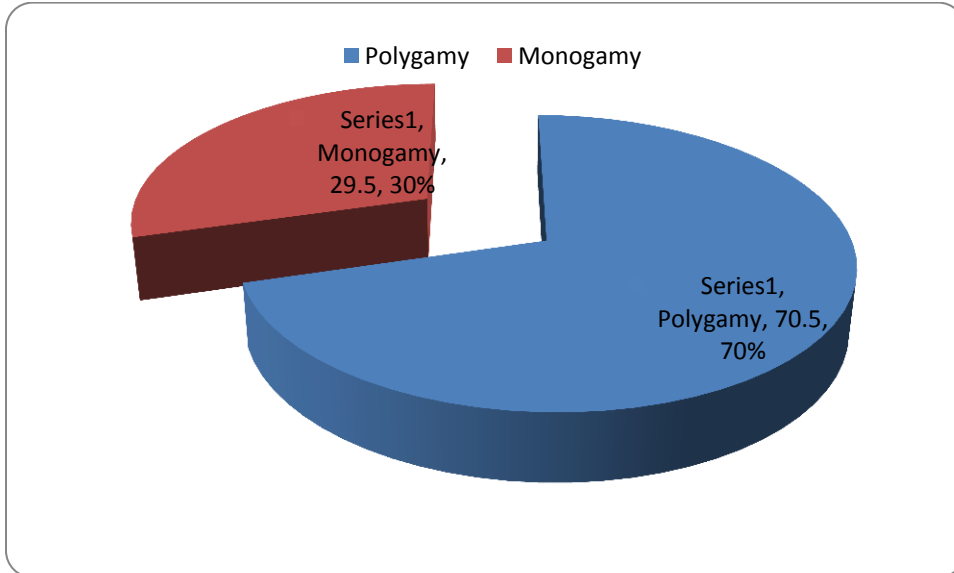


Figure 6 above indicates that most of the mothers lived in a polygamous family and these constituted 70% of the respondents. 30% of the respondents were monogamous. This therefore, means that the study was based on mothers who had issues to do with less male involvement in PMTCT services and their responses can be relied on.

#### **4.3.6 Occupations of respondent**

When asked about occupation, figure 7 has more details.

**Figure 7: Occupation of Respondent**

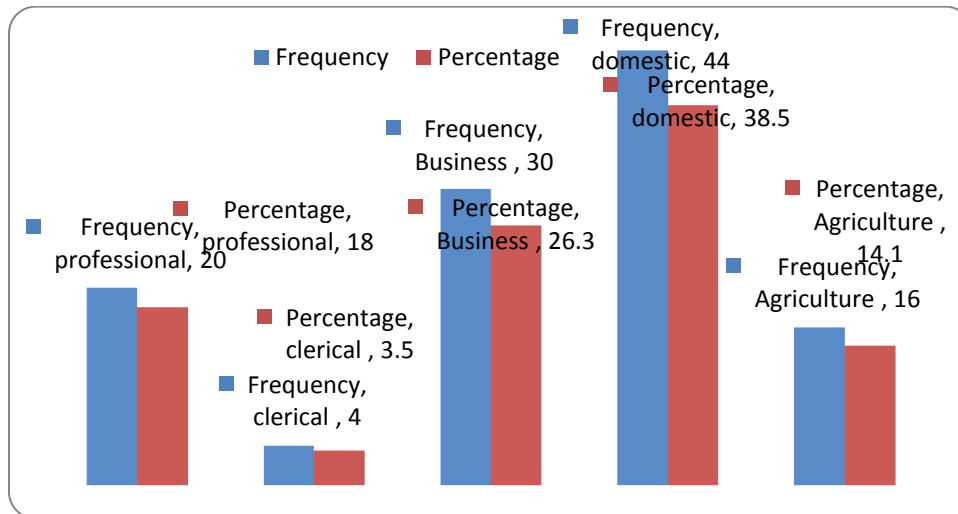


Figure 7 above indicates that most of the mothers were domestic mothers and these had 38.5%, business women were represented by 26.3%, professionals constituted 18%, and farmers were 14.1%. The last category of the respondents was represented by 3.5% and these were clerical. This therefore, means that the study was based on mothers who were not working or living home. This thus implies that the study was informed by mothers who were not so much professional which means that awareness in mothers was high.

#### **4.4. Empirical findings**

In this section, the research findings were presented as per the dependent and independent variables used by the study. These findings were thus obtained on predisposing factors, socio-economic and cultural factors, health system related factors and utilisation of PMTCT services in MNRH. In this case therefore, to understand the factors affecting utilisation of PMTCT services in MNRH, respondents were introduced to different pre-conceived statements as per each variable to listen to their views and below are the findings that were found on each dimension.

#### 4.4.1 Findings on availability of PMTCT services in Mulago referral Hospital

To understand the availability of PMTCT services in MNRH, the respondents were introduced to different items to have their say. Their responses were computed by making an aggregate of responses given by respondents to the 10-items and 5point Likert scale (1=Strongly Disagree, 2=Disagree, 3=Not sure, 4=Agree and 5=Strongly Agree), which sought to measure the prevalence of PMTCT services in MNRH which were categorized according to their percentages and means as follows:

**Table 5: Descriptive Statistics on availability of PMTCT services**

	1	2	3	4	5	Mean	Std. Deviation
The hospital has one of the best antenatal care services	37.3%	12.6%	50%			2.57	.986
Child protection services are available in Mulago referral hospital	6.5%	34.2%	53.9%	3.9%	2.6%	3.42	1.088
The hospital has enough family planning products and services	11.8%	5.2%	35.5%	42%	5.2%	3.64	1.176
The hospital provides free ARVs to mothers	2.6%	3.9%	7.8%	59%	26.3%	4.23	.679
Counseling and HIV testing are available in the hospital	1.3%	1.3%	3.9%	61.8%	31.5%	4.24	.834
The PMTCT services in Mulago extends as far as labor care	1.3%	1.3%	3.9%	71.8%	21.5%	4.28	.541
STI/HIV information services are available	0%	0%	7.8%	50%	42.2%	4.48	.502



Postpartum care is available	3.9%	3.9%	7.8%	39.4%	44.7%	4.48	.502
Delivery care is also available in Mulago referral center	0%	0%	7.8%	32.2%	60%	4.50	.599
Adequate mother-child care services are provided by the hospital	0%	0%	14.6%	29.3%	54.8%	4.64	.517

The results in table 5 above revealed that the means for most of the items were above 3.5. It was found out that out of the 10-items that were introduced to respondents, 8-items were indicated with a data mean above 3.5 and 2-items had data means below 3.5. Based on the scale of 1-strongly disagree to 5-strongly agree, any data mean of above 3.5 indicates existence of the variables under study. This thus, statistically means that MRH has PMTCT services in places. Among the items that had means above 3.5 included; Adequate mother-child care services are provided by the hospital (4.64); Delivery care is also available in Mulago referral center (4.50); Postpartum care is available (4.48); STI/HIV information services are available (4.48); The PMTCT services in Mulago extends as far as labor care (4.28); Counseling and HIV testing are available in the hospital (4.24); The hospital provides free ARVs to mothers (4.23); The hospital has enough family planning products and services (3.46). All these implies that MRH has a number of services in place ranging to delivery services, counseling and HIV testing services, postpartum care and many others as indicated.

However, on the other hand, some of the items were indicated with a mean below 3.5 and these meant that MRH lacked in certain PMTCT services since many respondents doubted and disagreed with by most of respondents. Among the items that proved this assertion or position included; Child protection services are available in Mulago referral hospital (3.42); the hospital has one of the best antenatal care services (2.57). This implies that MRH has no enough child protection services and best antenatal care services.

From the interviews conducted, it was indicated by 79.2% of the interviewees that PMTCT services were completely available and accessible in MRH. This means that they supported what had been foretold in questionnaires. Among the PMTCT services they pointed out included; mother-child care services delivery care; ARVs for pregnant mothers, Counseling and HIV testing services, Postpartum care and STI/HIV information services. One of them was quoted saying,

*“MRH is the main hospital in Uganda, so be sure that we have all PMTCT services because it was launched from here and if you are really interested, you should go down and check with the PMTCT management office, all services are provided...”*

Basing on this quotation, *“MRH is the main hospital in Uganda, so be sure that we have all PMTCT services because it was launched from here and if you are really interested, you should go down and check with the PMTCT management office, all services are provided...”* it implies that MRH has all PMTCT services which are essential for safe delivery in Uganda.

The above findings seemed to tally exactly with the documents reviewed. For instance, MRH annual report (2013) reports that MRH offers a range of PMTCT services which starts from counseling, delivery and postnatal services.

#### **4.4.2 Findings on the predisposing factors influencing the utilization of PMTCT services in Mulago Referral Hospital**

To understand the predisposing factors influencing utilisation of PMTCT services in MRH, the respondents were introduced to different items to have their say. Their responses were computed by making an aggregate of responses given by respondents to the 8-items and 5point Likert scale (1=Strongly Disagree, 2=Disagree, 3=Not sure, 4=Agree and 5=Strongly Agree), which sought to measure predisposing factors influencing utilisation of PMTCT services in MRH which were categorized according to their percentages and means as follows:

**Table 6: Descriptive Statistics on the predisposing factors influencing the utilization of PMTCT services**

	1	2	3	4	5	Mean	Std. Deviation
I am aware that a mother who is HIV positive can transmit the AIDS virus to her child during delivery	9%	36%	33%	16.5%	4.5%	1.89	.319
I am aware that a mother who is HIV positive can transmit the AIDS virus to her child through breast milk	4.5%	27%	33%	30%	4.5%	2.59	1.046
I am aware that Anti Retro Viral drugs can be given to the mother and reduce the chance of transmission of HIV from a mother to her child	3%	28.5%	31.5%	30%	6%	3.01	.825
I am aware that delivering the baby by operation reduces the chance of transmission of HIV from a mother to her child	1.5%	22.5%	24%	27%	24%	3.83	1.174
Avoiding breastfeeding reduce the chance of transmission of HIV from a mother to her child	4.5%	6%	24%	34.5%	30%	3.84	1.149
There are side effects associated with use of PMTCT services on the baby	1.5%	15%	18%	42%	22.5%	3.87	1.194
I am aware that a mother who is HIV positive can transmit the AIDS virus to her child during pregnancy	9%	6%	10.5%	45%	28.5%	4.42	.623
Have you ever heard about a programme called Prevention of Mother to Child Transmission	0%	10.5%	25.5%	27%	36%	4.49	.502

The results in table 6 above revealed that most of the items had means above 3.5. On the 8-items, 5-items had data above 3.5 and 3-items had data means below 3.5. Based on the scale of 1-strongly disagree to 5-strongly agree, any data mean of above 3.5 indicates existence of the variables under study. This thus, statistically means that mothers were predisposed to PMTCT services in Mulago and this likely to have caused to their utilization of PMTCT services. This position was confirmed by the following items that had means above 3.5 included; I have ever heard about a programme called Prevention of Mother to Child Transmission (4.49); I am aware that a mother who is HIV positive can transmit the AIDS virus to her child during pregnancy (4.42); There are side effects associated with use of PMTCT services on the baby (3.87); Avoiding breastfeeding reduce the chance of transmission of HIV from a mother to her child (3.84); I am aware that delivering the baby by operation reduces the chance of transmission of HIV from a mother to her child (3.83). This implies that most of the mothers to high extent knew or are predisposed to utilization of PMTCT services in MRH.

On the other hand, some factors reported indicated that mothers were not predisposed to PMTCT services in MRH. Among the items that confirmed the absence of predisposing factors indicated; I am aware that Anti-Retroviral drugs can be given to the mother and reduce the chance of transmission of HIV from a mother to her child (3.01); I am aware that a mother who is HIV positive can transmit the AIDS virus to her child through breast milk (2.59); I am aware that a mother who is HIV positive can transmit the AIDS virus to her child during delivery (1.89).

The responses obtained from the Medical workers in an interview did not tally exactly with what most of the mothers in questionnaires indicated. For instance, 100% of the interviewees did not admit that mothers were predisposed to PMTCT services since most of them are ignorant, domestic workers and young. Others find PMTCT services as waste of time. One of the midwives when asked replied,

*“...you know our mothers and their behaviors, the mothers that mostly utilize our services here are those who have some education, informed and have husbands or friends who have been here but most of them are not predisposed that is why there are few who utilize our services...”*

The above quotation, *“...you know our mothers and their behaviors, the mothers that mostly utilize our services here are those who have some education, informed and have husbands or friends who have been here but most of them are not predisposed that is why there are few who utilize our services...”* means that mothers are not predisposed on PMTCT services available in MRH and this affects their utilization in turn.

However, basing on the documents reviewed, it was found out that most of the mothers in Uganda are not predisposed to utilization of PMTCT services. According to MOH annual survey (2011), it indicates that few mothers are aware of PMTCT services in referral centers in Uganda and this is exemplified in the number of children delivered with Kids by mothers in Uganda.

#### 4.4.2.1 Correlation results for Predisposing factors and utilization of PMTCT services

The first hypothesis stated, “*Predisposing factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital.*” Spearman correlation coefficient ( $r$ ) was used to test the hypothesis. Table 7 presents the test results.

**Table 7: Correlation results for Predisposing factors and utilization of PMTCT services**

			Predisposing factors	PMTCT services
Spearman's rho	Predisposing factors	Correlation Coefficient	1.000	.669**
		Sig. (2-tailed)	.	.000
		N	114	114
		PMTCT services	Correlation Coefficient	.669**
		Sig. (2-tailed)	.000	.
		N	114	114

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Findings show that there was a significant positive correlation ( $\rho = .669$ ) between predisposing factors and PMTCT services. The coefficient of determination ( $\rho^2 = .000$ ) shows that predisposing factors accounted for 66.9% change in utilization of

PMCTC services. These findings were subjected to a test of significance ( $p$ ) and it is shown that the significance of the correlation ( $p = .000$ ) is less than the recommended critical significance at 0.05. Thus, the relationship was significant. Because of this, the hypothesis “*Predisposing factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital*” was accepted.

Thus, the implication of the findings was that **Predisposing factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital**. The positive effect implies that a change in predisposing factors relates to a significant change in utilization of PMTCT services in MRH. The positive nature of the correlation implied that the mothers are predisposed and this has enhanced the utilization of PMTCT services in MRH.

#### **4.4.2.2 Regression results for Predisposing factors and utilization of PMTCT services**

A further analysis was conducted using a regression to determine the effect of predisposing factors on utilization of PMTCT services. Findings are presented in Table 8, accompanied by analysis and interpretation.



**Table 8: Model summary for Predisposing factors and utilization of PMTCT services**

<i>Regression Statistics</i>					
Multiple R	.652				
R Square	.425				
Adjusted R Square	.420				
Standard Error	3.34				
Observations	114				
<i>ANOVA</i>					
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Sig F</i>
Regression	1	12.858	12.858	82.786	.000
Residual	113	17.396	.155		
Total	113	30.254			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	
Intercept	1.623	.334	4.865	.000	
Predisposing factors	.672	.074	9.099	.000	

Findings in Table 8 show a moderate linear relationship (Multiple R = .652) between predisposing factors and utilization of PMTCT services in MRH. The adjusted R Square shows that predisposing factors account for 42% change in utilization of PMTCT services. These findings were subjected to an ANOVA test, which showed that the significance (Sig F = .000) of the Fishers ratio (F = 82.786) was greater than the critical significance at .05. Hence, the findings were accepted. Interview findings supported the findings obtained from questionnaires.

#### **4.4.3 Findings on the socio-economic and cultural factors influencing the utilization of PMTCT services in Mulago Referral Hospital**

To understand whether socio-economic and cultural factors influencing utilisation of PMTCT services in MRH, the respondents were introduced different items to have their say. Their responses were computed by making an aggregate of responses given by respondents to the 10-items and 5point Likert scale (1=Strongly Disagree, 2=Disagree, 3=Not sure, 4=Agree and 5=Strongly Agree), which sought to find out socio-economic and cultural factors influencing utilisation of PMTCT services in MRH which were categorized according to their percentages and means as follows:

**Table 9: Descriptive Statistics on socio-economic and cultural factors influencing the utilization of PMTCT services**

	1	2	3	4	5	Mean	Std. Deviation
My husband has no problem with me when it comes to accessing PMTCT services	21%	18.2%	30.2%	22.3%	21%	2.91	1.266
I don't incur a lot of money to come to Mulago for PMTCT services	9.2%	19.7%	32.8%	25%	14.4%	3.39	1.180
My religion doesn't stop me from using PMTCT services	3.9%	11.8%	26.3%	31.5%	27.6%	3.60	1.180
My husband accompanies when I am going for PMTCT services.	1.3%	21%	21%	35.5%	21%	3.64	1.138
I have heard a lot of health education about PMTCT services	0%	0%	7.8%	69.7%	22.3%	3.75	1.172
PMTCT services in Mulago are costly	0%	0%	0%	63.1%	36.8%	3.84	1.069
Mulago referral hospital is within reach	3.9%	6.5%	30.2%	36.8%	23.6%	3.85	1.235
You have to pay a lot of addition costs just to access PMTCT services	10.5%	19.7%	22.3%	30.2%	14.4%	3.97	1.251
I can be tested for HIV without the permission of my husband/partner.	21%	13%	6.5%	38%	21%	4.05	1.343
I know all PMTCT services required for mothers who are pregnant	11.8%	25%	0%	48.6%	15.7%	4.11	1.200
I plan with my husband about our child birth	17.8%	19%	0%	43.6%	20%	4.39	.878

The results in table 9 above revealed that the means for most of the items were above 3.5. It was found out that out of the 11-items that were introduced, 9-items had a data means above 3.5 and only 2-items had a data mean below 3.5. Based on the scale of 1-strongly disagree to 5-strongly agree, any data mean of above 3.5 indicates existence of the variables under study. This thus, statistically means that socio-economic and cultural factors affect utilization of PMTCT services in MRH. Among the items that confirm this statistical claim include; I plan with my husband about our child birth (4.39); I know all PMTCT services required for mothers who are pregnant (4.11); I can be tested for HIV without the permission of my husband/partner (4.05); You have to pay a lot of addition costs just to access PMTCT services (3.97); Mulago referral hospital is within reach (3.85); PMTCT services in Mulago are costly (3.84); I have heard a lot of health education about PMTCT services (3.75); My husband accompanies when I am going for PMTCT services (3.64); My religion doesn't stop me from using PMTCT services (3.60). All these signify that socio-economic and cultural factors influence the utilization of PMTCT services.

On the other hand, some of the items seemed to deny the above claim. Among these included;

I don't incur a lot of money to come to Mulago for PMTCT services (3.39); my husband has no problem with me when it comes with accessing PMTCT services (2.91). This implies that despite the fact that PMTCT negatively influence the utilization, on the other hand, some are not affected by certain factors especially when it comes to distance and money incurred in transport.

Interviews with the key informants shed more light on socio-economic and cultural factors influencing utilization of PMTCT services and these were supportive of the findings obtained using questionnaire. Key informants revealed that most mothers in Uganda are not supported by their husband to seek for PMTCT services, they lack enough money to travel long distances. They opined that socio-economic and cultural factors negatively impact on utilization. Indeed, emphasizing the socio-economic and cultural factors, one key informant A said:

*....many mothers in Uganda who get pregnant are not prepared for them and usually they lack enough money to travel long distances, others are barred by their husbands and these are too detrimental in utilization of PMTCT....*

He added,

*Others think that there are additional payments that must be paid at the hospital and this stops them from coming in MRH for PMTCT services....*

The above position was continually supported by documents reviewed in MRH and referral centers. For instance, according to PEAP report (2010), it was reported that mothers are the poorest in Uganda and this is a strong factor that impels the utilization of health services. On top of that, World Bank report (2005) and MOH health survey (2008) showed that males are among the strong detracting factors to utilization of PMTCT services. Generally, findings show that socio-economic factors negatively impact on utilization of PMTCT services.

**4.4.3.1 Correlation results on the influence of socio-economic and cultural factors on utilization of PMTCT services**

To test if socio-economic and cultural factors influence the utilization of PMTCT services, a spearman rho correlation coefficient was done to the study and the results are shown in Table 10 below. To verify 1q this hypothesis, a null hypothesis was derived that *socio-economic and cultural factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital*

**Table 10: Correlation results for influence of socio-economic and cultural factors on utilization of PMTCT services**

			Socio-economic and cultural factors	PMTCT services
Spearman's rho	Socio-economic and cultural factors	Correlation Coefficient	1.000	.828**
		Sig. (2-tailed)	.	.000
		N	114	114
		PMTCT services	Correlation Coefficient	.828**
		Sig. (2-tailed)	.000	.
		N	114	114

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Findings show that there was a significant positive correlation ( $rho = .828$ ) between socio-economic and cultural factors and utilization of PMTCT services. Since the correlation do imply causal-effect as stated in the first objective, the coefficient of determination ( $rho^2 = .000$ ), which is a square of the correlation coefficient was computed and expressed as a percentage to determine the change in utilization of PMTCT services due to socio-economic and cultural factors. Thus, findings show that socio-economic and cultural factors accounted for 82.8% change in utilization of PMTCT n services. These findings were subjected to a test of significance (p) and it has shown that the significance of the correlation (p = .000) is less than the recommended critical significance at 0.05. Thus, the effect was significant. Because of this, the hypothesis “*socio-economic and cultural factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital*” was accepted.

The implication of these findings is that “*socio-economic and cultural factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital*”. The significant influence implied that a change in socio-economic factors contributed to a significant change in utilization of PMTCT services. The positive nature of the influence implied that the change in socio-economic and cultural factors was in the opposite direction with utilization of PMTCT services whereby addressing socio-economic and cultural factors can contribute to high utilization of PMTCT services and vice versa.

**4.4.3.2 Regression results for influence of socio-economic and cultural factors on utilization of PMTCT services**

Further analysis was conducted using a regression to determine the influence of socio-economic and cultural factors on utilization of PMTCT services. Findings are presented in Table 11, accompanied with an analysis and interpretation.

**Table 11: Model summary on influence of socio-economic and cultural factors on utilization of PMTCT services**

<i>Regression Statistics</i>					
Multiple R	.817				
R Square	.667				
Adjusted R Square	.664				
Standard Error	.300				
Observations	114				
<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Sig F</i>
Regression	1	20.187	20.187	224.567	.000 <sup>a</sup>
Residual	112	10.068	.090		
Total	113	30.254			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	
Intercept	3.194	.100	31.790	.000	
socio-economic and cultural factors	.352	.024	14.986	.000	



Findings in Table 11 shows a strong linear relationship (Multiple R = .817) between socio-economic and cultural factors and utilization of PMTCT services. Going by the adjusted R Square, it has shown that socio-economic and cultural factors account for 66.4% change in utilization of PMTCT services. These findings were subjected to an ANOVA test, which showed that the significance (Sig F = .000) of the Fishers ratio (F = 224.567) was greater than the critical significance at .05. Hence, the findings were accepted.

#### **4.4.4 Findings on the influence of health system related factors on the utilization of PMTCT services in Mulago Referral Hospital**

To understand whether health system related factors had an influence on utilisation of PMTCT services in MRH, the respondents were introduced to different items to have their say. Their responses were computed by making an aggregate of responses given by respondents to the 10-items and 5point Likert scale (1=Strongly Disagree, 2=Disagree, 3=Not sure, 4=Agree and 5=Strongly Agree), which sought to find out whether the health system related factors had an influence on utilisation of PMTCT services in MRH which were categorized according to their percentages and means as follows:

**Table 12: Descriptive Statistics on the influence of health system related factors on the utilization of PMTCT services in Mulago Referral Hospital**

	1	2	3	4	5	Mean	Std. Deviation
The health workers are professionally trained in handling patients	13%	7.8%	13%	38%	27.6%	3.55	1.512
There are no stressing lines of patients in the hospital	11.8%	13%	5.2%	47.3%	22.3%	3.58	1.167
The health workers in Mulago are really the nurses and counselors you can trust because they are confidential	7.8%	14.4%	9.2%	28.9%	36.8%	3.67	1.053
The health workers in the department of PMTCT services in Mulago are caring	15.7%	10.5%	0%	51.3%	22.3%	3.82	1.052
The health department of PMTCT services is open all the time	5.2%	21%	3.9%	35.5%	26.3%	3.87	1.252
The health workers are always available	14.4%	6.5%	11.8%	34.2%	30.2%	3.93	1.037
I have always received the type of PMTCT service I want at anytime	3.9%	3.9%	7.8%	52.6%	31.5%	4.28	.507
There is no congestion in Mulago that can stop someone to access PMTCT services	2.6%	2.6%	6.5%	53.9%	34.2%	4.28	1.052
There are no additional payment done to access PMTCT services in Mulago	3.9%	5.2%	0%	50%	40.7%	4.32	.791
The health workers take time to tell you what services you really need			7.5%	59%	33.4%	4.33	.899

The results in table 12 above revealed that the means for all items were above 3.5. Based on the scale of 1-strongly disagree to 5-strongly agree, any data mean of above 3.5 indicates existence of the variables under study. This thus, statistically means that MRH as a hospital had enough personnel and facilities to allow utilization of PMTCT services. Among the items that confirm this statistical claim included; The health workers take time to tell you what services you really need (4.33); There are no additional payment done to access PMTCT services in Mulago (4.32); There is no congestion in Mulago that can stop someone to access PMTCT services (4.28); The health workers are always available (3.93); The health department of PMTCT services is open all the time (3.87); The health workers in the department of PMTCT services in Mulago is caring (3.82); The health workers in Mulago are really the nurses and counselors you can trust because they are confidential (3.67); There are no stressing lines of patients in the hospital (3.58); The health workers are professionally trained in handling patients (3.55). This thus implies that the health system in MRH was favorable to mothers to keep utilizing PMTCT services. This is because the health workers were reported as professionally trained, confidential, enough and the hospital under the PMTCT is not so much congested and even the levels of corruption has reduced.

Interviews with the key informants shed more light on health system related factors and seemed to be in line with what most of the mothers in questionnaires reported. Key informants revealed that MRH has one of the best customers in ANC, congestion in accessing health services has also reduced, health workers are professional, caring and no bribes are still reported. All these lead to subsequent utilization of PMTCT services in

MRH. They opened that there may be cases of bribes to those who are ignorant but the hospital has a tough corrective personnel who usually arrest those medical officers who take money from patients. To emphasize this position, one key informant D said: *....there may be a lot that has not yet been done or reached at because some reasons that are inevitable but as well we have achieved and changed a lot of things...among such things includes, reducing on the time mothers spend lining up for PMTCT services, we have expanded the hospital into many frontiers and these have all facilitated utilization of PMTCT services...*

Similarly, key informant B had this to say:

*We have done a lot to see that PMTCT services are accessible to our mothers and I can assure you that we have enough trained nurses and midwives who help all kind of mothers received here...mothers by now can attain prenatal, and postnatal services....*

The quotation suggests that health system related factors have been favorable in MRH and these are key in utilization of PMTCT services especially when it comes to careful staffs and possession of all kind of services required by mothers.

However, data collected from interview guide and questionnaires seemed contrary to what documents reviewed indicated. For instance, Transparency International report (2011) placed MRH in 8<sup>th</sup> position where corruption has been a major barrier to accessing and utilization of services. In addition, New Vision (2012, pg. 23) indicates that mothers who go for PMTCT services in certain cases are directed outside the hospital by doctors and are taken in their own clinics.

**4.4.4.1 Correlation results for the influence of health system related factors on the utilization of PMTCT services**

To test if there was a relationship between health systems related factors and utilisation of PMTCT services, a spearman rho correlation coefficient was done by the study and the results are shown in Table 13 below. To verify this hypothesis, a null hypothesis was derived that *health systems related factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital*

**Table 13: Correlation results for influence of health system related factors on the utilization of PMTCT services**

			Health systems related factors	PMTCT services
Spearman's rho	Health systems related factors	Correlation Coefficient	1.000	.848**
		Sig. (2-tailed)	.	.000
		N	114	114
		PMTCT services	Correlation Coefficient	.848**
		Sig. (2-tailed)	.000	.
		N	114	114

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Findings show that there was a moderate negative correlation ( $rho = .848$ ) between health systems related factors and utilization of PMTCT services. Since the correlation does imply causal-effect as stated in the first and second objective, the coefficient of determination ( $rho^2 = .848$ ), which is a square of the correlation coefficient was computed and expressed as a percentage to determine the change in utilization of PMTCT services due to systems related factors. Thus, findings show that systems related factors accounted for 84.8% change in utilization of PMTCT services. These findings were subjected to a test of significance ( $p$ ) and it is shown that the significance of the correlation ( $p = .000$ ) is less than the recommended critical significance at 0.05. Thus, the effect was significant. Because of this, the hypothesis “*health systems related factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital*” was accepted.

The implication of these findings is that health systems related factors have a positive influence on utilization of PMCTC services. The significant and positive influence implied that a change in health systems related factors contributed to a positive change in utilization of PMTCT services. The positive nature of the influence implied that the change in health system related factors and utilization of PMTCT services was in the opposite direction whereby improvement in health systems related factors contributed to high utilization of PMTCT services and vice versa.

**4.4.4.2. Regression results for influence of health system related factors on the utilization of PMTCT services**

Further analysis was conducted using a regression to determine the influence of health systems related factors on utilization of PMTCT services. Findings are presented in Table 14, accompanied with an analysis and interpretation.

**Table 14: Model summary for influence of health system related factors on the utilization of PMTCT services**

Multiple R	.827				
R Square	.684				
Adjusted R Square	.681				
Standard Error	.292				
Observations	114				
ANOVA					
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Sig F</i>
Regression	1	20.688	20.688	242.200	.000 <sup>a</sup>
Residual	112	9.567	.085		
Total	113	30.254			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	
Intercept	3.018	.108	4.865	.000	
Health systems related factors	.413	.027	9.099	.000	

*Source: Primary data*

Findings in Table 14 show a strong linear relationship (Multiple R = .827) between Health systems related factors and utilization of PMTCT services. Going by the adjusted R Square, it is shown that Health systems related factors account for 68.1% change in utilization of PMTCT services. These findings were subjected to an ANOVA test, which showed that the significance (Sig F = .000) of the Fishers ratio (F = 242.200) was greater than the critical significance at .05. Hence, the findings were accepted.



## CHAPTER FIVE

### SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter provides a summary of the findings from the study, discusses the empirical results in view of the research objectives, stated hypotheses and similar findings in other research elsewhere. The researcher's conclusions are presented and finally recommendations made for future studies on the subject of factors influencing utilization of PMTCT services.

#### 5.2 Summary

##### 5.2.1 The influence of Predisposing factors on utilization of PMTCT services.

Predisposing factors *had a positive influence on utilization of PMTCT services in MNRH*. In particular, the positive moderate effect implied that a change in predisposing factors contributed to a positive and significant moderate change in utilization of PMTCT services whereby improvement in patient related factors caused improvement in utilization of PMTCT services and vice versa. Predisposing factors accounted for 66.9% variation in utilization of PMTCT services. In addition, there was a strong linear (.652) relationship between predisposing factors and utilization of PMTCT services. Predisposing factors accounted for 42% variation in utilization of PMTCT services.

##### 5.2.2 The influence of Socio-economic and cultural factors on utilization of PMTCT services

Socio-economic and cultural factors *had a positive influence on utilization of PMTCT services in MRH*. In particular, the positive moderate effect implied that a change in Socio-economic and cultural factors contributed to a positive and significant moderate

change in utilization of PMTCT services whereby improvement in Socio-economic and cultural factors caused improvement in utilization of PMTCT services and vice versa. Socio-economic and cultural factors accounted for 82.8% variation in utilization of PMTCT services. In addition, there was a strong linear relationship between Socio-economic and cultural factors and utilization of PMTCT services. Socio-economic and cultural factors accounted for 66.7% variation in utilization of PMTCT services.

### **5.2.3 The influence of Health systems related factors on utilization of PMTCT services**

Health systems related factors *had a positive influence on utilization of PMTCT services in MRH*. In particular, the positive moderate effect implied that a change in Health systems related factors contributed to a positive and significant moderate change in utilization of PMTCT services whereby improvement in Health systems related factors caused improvement in utilization of PMTCT services and vice versa. Health systems related factors accounted for 82.8% variation in utilization of PMTCT services. In addition, there was a strong linear relationship between Health systems related factors and utilization of PMTCT services. Health systems related factors accounted for 66.4% variation in utilization of PMTCT services.

## **5.3 Discussion of findings**

### **5.3.1 The influence of predisposing factors on utilization of PMTCT services**

The first hypothesis stated, “Predisposing factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital”. The inferential statistics indicated that there was a significant positive influence of predisposing factors on

utilization of PMTCT services. Mumcu et al, (2004) support the above finding where in their study found out that predisposing factors were among the major contributing factors on utilization of PMTCT services. In the same study, it showed that the age of an expectant mother determined the seeking of PMTCT services because of the fear and stigma attached to adolescent pregnancy from the community. On contrary to what the study found out, Nakazzi (2002) found that young teens did not seek medical help because of insufficient resources to meet the health provider's fee and transportation costs. On the contrary, Rob et al. (2007), in their study showed that younger age especially age group (20-29) years was more likely to be associated with use of modern contraceptives compared to age group (40–49) years. On the other hand, Utomo et al. (1983), in their study showed that older age was one of the four major independent factors associated with the use and nonuse of contraception. Hence, there is some inconsistency regarding the relation between the age of an expectant mother and the seeking of PMTCT services.

Although Agyei and Migadde (1995), Feldman and Maposhere (2003), Utomo et al. 1983), showed that higher contraceptive use was associated with a higher number of surviving children and women with several children who wanted to avoid further pregnancies, Todd et al. (2008) in their study reported that utilization of PMTCT services was independently associated with having a greater number of living children. Feldman and Maposhere(2003), showed that contraceptive and condom use increased markedly after HIV diagnosis, especially among those who were attending support groups. All these studies are incongruent to the above findings.

Congruent with the study findings, Gray et al. (1998), in their study showed that pregnancy prevalence was greatly reduced in HIV infected women, owing to lower rates of conception. The prevalence of pregnancy was low both in HIV infected women without symptoms and in women with symptoms of HIV associated disease.

Wamleh and Gardner (1999) support the findings that utilisation of PMTCT services highly depend on the awareness of mothers who need the services. A study about knowledge as an important predictor of PMTCT use among young people irrespective of their HIV status showed that condom knowledge at logistic regression was associated with a 33% increased use of condoms (OR = 1.33) among both male and female participants (Ryan et al., 2007). In another study on contraceptive use in women enrolled into preventive HIV vaccine trials reported insufficient knowledge of certain methods to be among the reasons for not using contraception and that misconceptions related to FP methods and their incorrect use might have led to inconsistent use resulting in undesired pregnancies (Kibuuka et al., 2009).

### **5.3.2 The influence of socio-economic and cultural factors on utilization of PMTCT services**

Socio-economic and cultural factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital”. The inferential statistics indicated that there was a significant positive influence of socio-economic and cultural factors on utilization of PMTCT services. Findings of this research support other studies, which also established that socio-economic and cultural factors impinge utilization of PMTCT services in medical centers. For instance, in a study by Kikwilu et al, (2008), suggested that less than half of the study population could not use PMTCT services due to inability

to pay. In addition, Wamala et al. (2006) in his study reported that socioeconomic disparities affected access and utilization of PMTCT services increasing the disease burden. Similarly Ahlberg et al. (1996) and Ikebe, et al. (2002) found out that the availability of payment schemes other than out of pocket expenditures had been associated with increased access to and utilization of PMTCT services including preventive PMTCT services. PMTCT health education too positively influenced utilization of PMTCT services (Edelstein, 2002).

Congruent to study findings, Krista (2002) in his study reported that educational levels had an influence on the woman's health seeking behaviour and therefore those that had continuously been educated about the importance of going to the health facility when they were pregnant and its importance would always try to access medical services. This meant that once they delivered from a health facility the chances that a woman would be exposed to the various methods of family planning by the health service provider were high. In addition, Hagen et al. (1999) reported a strong trend toward declining fertility and increasing utilization of contraceptives among relatively well-educated, middle-class population.

Contrary to study findings, Utomo et al. (2003) ascertained that current users of contraceptives were more educated or had spouses who were more educated than their counterparts. Similarly, (Rob et al. 2007) in their study in six countries reported that secondary or higher educational attainment was more likely to be associated with increased use of modern contraceptives in all the six countries. Hence, there is consistency regarding the relationship between the education of an expectant mother and the seeking of PMTCT services.

According to Raiford et al, (2007) reported that women with HIV were more likely to use condoms if they had high partner communication self-efficacy and also reported low partner-related barriers to condom use. Similarly, Robet, al. (2007), in his study showed that partner approval was more likely to be associated with the use of modern contraceptive in all the six countries that included Kenya, Malawi, Tanzania, Ivory Coast, Burkina Faso, and Ghana.

In another study by Wolff et al, (2000), partner opposition was found to cause a statistically significant increase in unmet need accounting for as much as 20 percent of unmet need reported by women and a shift in contraceptive use favoring traditional methods over modern methods.

In line with the study findings, Ntabona (2002) reported that men's involvement was a major factor for utilization of PMTCT services. Men's involvement was dependent on the socio-cultural context and there were as yet no clear-cut guidelines on how far the partner/husband's participation could go. According to Lee (1999), in his study reported the following as part of men's participation: attending women's health education sessions; attending counseling sessions; using condoms; acting as community-based volunteer and for Rutenberg et al (2002:29-30), men's involvement meant that men would choose to come to the clinic with their partners, be counseled and get tested for HIV, support their partners in coping with HIV infection and support them financially or with transport to the clinic. In their study, De Cock, Fowler, Mercier, De Vincenzi, Saba, Hoff, Alnwick, Rodgers & Shaffer (2000), the focus of involvement of men in MTCT would be on their readiness to provide support, or their support to their female partners in

core PMTCT interventions which included counseling and testing, use of prophylactic antiretroviral drugs and choice of baby's feeding options.

Furthermore Sukati and Shabangu (2006), in their study also found similar findings where they showed that, cultural expectations override individual factors such as knowledge about ones HIV Sero-positivity for example pressure from in-laws forces HIV positive women to have children despite their status, the desire to portray “femininity” and fulfill womanhood also contribute. Often culture shapes perceptions of the individuals belonging to that culture on matters of fertility including contraceptive use. In addition, Sennen et al., (2005) in their study showed that condoms use during the last occasional intercourse was only 36.8% of males and 47.5% of females. Failure to use condom was related to its perceived lack of efficacy and perceived quality. In conclusion, there was a relationship between cultural norms and utilisation of PMTCT services.

### **5.3.3. The influence of health systems related factors on utilization of PMTCT services**

The study found out that health systems related factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital. Findings of this research support other studies, which also established that without proper health facilities and personnel, utilization of PMTCT services becomes very difficult. For instance, according to Byamugisha (2007), factors such as geographical and financial access to PMTCT services and care; availability of the various types of PMTCT services as provided by the doctors such as family planning services, child protection services, STI/HIV information services, quality ante-natal care, counseling and HIV testing, antiretroviral therapy, labor care, delivery care, postpartum care, adequate mother-child care services especially in

public facilities, average cost of PMTCT services and use of alternative methods of PMTCT services, all determine the utilization of PMTCT services. These are in line with what the study findings indicated.

Christensen, et al.( 2002) in congruence continues to report that the use of PMTCT services had been more commonly associated with public than the private health service delivery systems. Furthermore,Postma, (1984) said that in Denmark, more than half of the urban poor preferred the public PMTCT facilities over the private facilities due to the low cost. However, Kikwilu and Hiza,( 1997) on the other hand, said that some of the alternative methods of PMTCT services considered included self-medication with drugs and herbs as well as traditional healers. In addition health services and in particular private FP service delivery play a big role in sexual and reproductive health behaviors, outcomes of risk perception and in this regard use of FP by PLWHA. In one study, results showed that the proximity of a private health facility in urban areas which reflected increased availability of FP methods was positively associated with current use as there was the presence of a higher number of trained FP service providers (Katende et al., 2003).

On contrary to the study findings still, Brouet al., (2009) in his study indicated that FP counseling and regular follow-up was accompanied by a high rate of contraceptive use and a low pregnancy incidence among PLWHA after deliver). A study in Rakai by Lutalo et al., (2000), found that using trained volunteers and social marketing of contraceptives could improve contraceptive uptake among PLWHA, which is in line with the study findings. However, Marissa Maier et al, (2008), reported that ART uptake was associated with an increase in fertility desire as women with HIV and on ART felt healthy and



therefore felt that they could have a normal healthy life thus the increase in the fertility desire, hence increase in pregnancy rates especially for women who wished to have children.

## **5.4. Conclusions**

### **5.4.1. The influence of predisposing factors on utilization of PMTCT services**

The first objective was “to establish the predisposing factors that influencing the utilization of PMTCT services.” The research question was “What are the predisposing factors that influencing the utilization of PMTCT services?” The researcher had hypothesized that, “Predisposing factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital”. The findings of this study showed that predisposing factors significantly and positively influence utilization of PMTCT services. Centered on the empirical results of this study, it is concluded that MRH need to ensure that mothers are collectively sensitized on the importance and availability of PMTCT services so that their level of utilization can increase rapidly.

### **5.4.2. The influence of socio-economic and cultural factors on utilization of PMTCT services**

The second objective was “to establish the socio-economic and cultural factors that influence the utilization of PMTCT services.” The research question was “What are the socio-economic and cultural factors that influence the utilization of PMTCT services?” The researcher had hypothesized that, “socio-economic and cultural factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital”. The findings of this study showed that socio-economic and cultural factors significantly and positively influence utilization of PMTCT services. Centered on the empirical results

of this study, it is concluded that MRH needs to see that it deals away with all kind of bribery and take closer PMTCT services to places where mothers can cheaply access them for increased utilization of PMTCT services.

#### **5.4.3. The influence of health systems related factors on utilization of PMTCT services**

The third objective was “to establish health systems related factors that influencing the utilization of PMTCT services.” The research question was “What the health systems related factors that influencing the utilization of PMTCT services?” The researcher had hypothesized that, “health systems related factors have a positive influence on the utilization of PMTCT services in Mulago Referral Hospital”. The findings of this study showed that health systems related factors significantly and positively influence utilization of PMTCT services. Centered on the empirical results of this study, it is concluded that MRH needs to continuously see that it puts in place favorable spaces, personnel such as, doctors, counselors, midwives and facilities required in making the hospital accessible to mothers.

### **5.5 Recommendations**

#### **5.5.1 The influence of predisposing factors on utilization of PMTCT services**

Based on empirical results, it is recommended that health professionals should encourage HIV positive women’s reproductive choices by increasing counseling and appropriate contraception provision at the time of HIV diagnosis and during follow up. Counseling on the side effects of the various PMTCT methods should be taken into account especially at the time of giving these options so that women are aware and therefore make informed choice which limit discontinuation. And lastly, there is need to improve

method specific knowledge on a wide range of contraceptives and address related safety concerns. Mothers can be involved to create awareness among their peers.

Service delivery related factors such as access to wide range of FP methods, FP counseling were associated with FP use. Effective delivery of FP services to PLWHA (availability and access of supplies through outlets or outreach services, referral linkages, and training in FP counseling and method provision) need to be strengthened.

There is need for ongoing monitoring of FP service provision and the effect of FP use on pregnancy incidences among PLWHA enrolled in care and receiving regular FP services. This will help in ongoing assessment of the effectiveness of the strategies being implemented.

### **5.5.2 The influence of socio-economic and cultural factors on utilization of PMTCT services**

From the conclusions of this study, it is recommended that Male involvement should be encouraged especially among HIV positive women and women who are using the condom only should be advised on how to access and use the emergency contraception to prevent unplanned pregnancies and PEP for preventing HIV infection among discordant couples. Targeting spouses through counseling sessions (discussing couple negotiation skills for FP use, encouraging couple FP counseling sessions) to address partner-related barriers may encourage PMTCT utilization.

### **5.5.3. The influence of health systems related factors on utilization of PMTCT services**

On the last objective, there is a need for MRH to ensure decongestion in the hospital by ensuring that more spaces for accessing PMTCT services are put in place. More permanent methods like male and female sterilization should be encouraged among women who would not want to have any more children. Both methods are effective against unwanted pregnancy and also in terms of cost. Therefore HIV positive women should be given an alternative of considering sterilization at the time they give birth

### **5.6. Limitations of the study**

The study was successful, though some limitations were encountered.

Some potential respondents who were considered to hold key policy information could not be reached for interview despite several reschedules. While some respondents considered it a waste of time as they had participated in such research previously, with no financial rewards. Time was lost as the researcher offered explanations that the study was purely for academic purposes. Some respondents failed to return the questionnaires issued to them, which was a limitation on the researcher's progress as timelines, had to be revised and in some cases extra costs were incurred in availing extra question

### **5.7. Contributions of the study:**

The findings of this study contribute to the existing body of knowledge in the area of utilisation of PMTCT services. The study further makes practical recommendations that aim at improving utilisation of PMTCT services in Uganda, a case study of MNRH.

## **5.8. Areas for Further Research**

Finally, the study tried to meet and achieve the set objectives as shown in the write-up, however, in the process the researcher has observed certain areas that require further researcher. These include:

- The study was limited to factors influencing the utilization of PMTCT services. There is therefore a need for further study to take into consideration of more factors that may be affecting utilization of PMTCT services in MRH because it may not only be these factors but also others
- The study was also limited to few factors and indicators affecting utilization of PMTCT services. There is a need for future research to replicate the findings employing multidisciplinary factors and wider coverage of utilization of PMTCT services because it is likely that respondents in MRH fair badly against such dimensions and indicators of utilization.
- This study was limited to MRH. This makes the study limited to MRH and not in other referral hospitals in Uganda. There is a need also for a further study to be replicated in other referral centers and hospitals to ascertain the similarity and differences in the findings.

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3. What is your highest level of education?

a) No education,      b) Primary,      c) secondary      d) Tertiary

e) Others (specify) -----

4. What is your marital status?

a) Single      b) Married      c) divorced      d) Separated      e) Widowed

5) If married, what is the nature of your marriage?

a) Polygamy      b) monogamy

6. What is your occupation?

a) Professional      b) Clerical      c) Business      d) Manual      e) Domestic      f) Agriculture

g) None

7. What is your religion?

a) Protestant      b) catholic      c) Muslim      d) Pentecostal      e) Others (specify) -

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**SECTION B: INDEPENDENT VARIABLE – UTILISATION FACTORS**

**i) PATIENT FACTORS**

**In this section please tick in the box that corresponds to your opinion/view according to a scale of 1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly Agree**

<b>No</b>	<b>Statement</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Have you ever heard about a programme called Prevention of Mother to Child Transmission					
2	I am aware that a mother who is HIV positive can transmit the AIDS virus to her child during pregnancy					
2	I am aware that a mother who is HIV positive can transmit the AIDS virus to her child through breast milk					
3	I am aware that a mother who is HIV positive can transmit the AIDS virus to her child during delivery					
4	I am aware that Anti Retro Viral drugs can be given to the mother and reduce the chance of transmission of HIV from a mother to her child					
5	I am aware that delivering the baby by operation reduces the chance of transmission of HIV from a mother to her child					
6	Avoiding breastfeeding reduce the chance of transmission of HIV from a mother to her child					
7	There are side effects associated with use of PMTCT services on the baby					



No	Statement	1	2	3	4	5
8	Even if you go for PMTCT services, the baby can still contract HIV/AIDs					
9	There are side effects associated with the use of PMTCT services on the mother					

### 11. ENABLING/SOCIO-ECONOMIC FACTORS

In this section please tick in the box that corresponds to your opinion/view according to a scale of 1 = Strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly Agree

No.	Statement	1	2	3	4	5
1	I know all PMTCT services required for mothers who are pregnant					
2	I plan with my husband about our child birth					
3	PMTCT services in Mulago are costly					
4	You have to pay a lot of addition costs just to access PMTCT services					
5	Mulago referral hospital is within reach					
6	I don't incur a lot of money to come to Mulago for PMTCT services					
7	My husband has no problem with me when it comes with accessing PMTCT services					

No.	Statement	1	2	3	4	5
8	I can be tested for HIV without the permission of my husband/partner.					
9	My husband accompanies when I am going for PMTCT services.					
10	I have heard a lot of health education about PMTCT services					
11	My religion doesn't stop me from using PMTCT services					

#### 111). HEALTH SYSTEM FACTORS

In this section please tick in the box that corresponds to your opinion/view according to a scale of 1 = strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly Agree

No.	Statement	1	2	3	4	5
1	The health workers in the department of PMTCT services in Mulago is caring					
	There are no additional payment done to access PMTCT services in Mulago					
3	There is no congestion in Mulago that can stop someone to access PMTCT services					
4	The health department of PMTCT services is open all					

No.	Statement	1	2	3	4	5
	the time					
5	The health workers take time to tell you what services you really need					
6	I have always received the type of PMTCT service I want at anytime					
7	There are no stressing lines of patients in the hospital					
8	The health workers are professionally trained in handling patients					
9	The health workers in Mulago are really the nurses and counselors you can trust because they are confidential					
10	The health workers are always available					

**SECTION C: DEPENDENT VARIABLE – AVAILABILITY OF PMTCT SERVICES**

In this section please tick in the box that corresponds to your opinion/view according to a scale of 1 = strongly Disagree, 2 = Disagree, 3 = Not Sure, 4 = Agree, 5 = Strongly Agree

No.	Quality ante-natal care	1	2	3	4	5
	Statement.					
1	The hospital has enough Counseling and HIV testing services					
2	Antiretroviral therapy services are available in Mulago referral hospital					
3	Retesting those tested negative initially services are available					
4	The ANC has FP & RH services					
	<b>Labor and Delivery care (Intrapartum services).</b>					
1	HIV Counseling and testing are available					
2	Free antiretroviral therapy is provided to mothers					
3	Safe delivery techniques are practice.					
4	Infant feeding counseling & support are available at the Centre.					

No.	Quality ante-natal care	1	2	3	4	5
	Statement.					
5	Facility based delivery is encouraged and services are available.					
6	Skilled delivery attendant is available					
7	FP & RH services are available					

**THANK YOU FOR YOUR PARTICIPATION!**

**APPENDIX II: INTERVIEW SCHEDULE FOR MEDICAL WORKERS IN  
PMTCT SERVICES IN MULAGO REFERRAL HOSPITAL**

1. Position in the Hospital .....

1a) Do you receive a big number of mothers seeking for PMTCT services in the hospital?

*Please tick the appropriate option.*

a)  Yes                      b)  No

b) If No, what are some of the predisposing factors affecting mothers to utilize PMTCT services in Mulago? (Probe all kind of dimensions)

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

2a) Are there some of enabling factors that necessitate some mothers to utilize PMCTC services in Mulago referral hospital?

a)  Yes                      b)  No

b) If yes, what are some of those factors and explain how they affect them? (Probe all dimensions of enabling factors understudy)

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

5a) Do you think Mulago referral hospital as a health centers as any way it affects the utilization of PMTCT services by mothers?

a)  Yes

b)  No

b) If yes, in what ways has Mulago hospital itself affected the utilization of PMTCT services by mothers?

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

**THANK YOU SO MUCH**

**APPENDIX III: TABLE FOR DETERMINING SAMPLE SIZE FROM A GIVEN  
POPULATION**

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	22	14	1200	29
		0	0		1
15	14	23	14	1300	29
		0	4		7
20	19	24	14	1400	30
		0	8		2
25	24	25	15	1500	30
		0	2		6
30	28	26	15	1600	31
		0	5		0
35	32	27	15	1700	31
		0	9		3
40	36	28	16	1800	31
		0	2		7
45	40	29	16	1900	32
		0	5		0
50	44	30	16	2000	32
		0	9		2
55	48	32	17	2200	32
		0	5		7



<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
60	52	34	18	2400	33
		0	1		1
65	56	36	18	2600	33
		0	6		5
70	59	38	19	2800	33
		0	1		8
75	63	40	19	3000	34
		0	6		1
80	66	42	20	3500	34
		0	1		6
85	70	44	20	4000	35
		0	5		1
90	73	46	21	4500	35
		0	0		4
95	76	48	21	5000	35
		0	4		7
10	80	50	21	6000	36
0		0	7		1
11	86	55	22	7000	36
0		0	6		4
12	92	60	23	8000	36
0		0	4		7

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
13	97	65	24	9000	36
0		0	2		8
14	10	70	24	1000	37
0	3	0	8	0	0
15	10	75	25	1500	37
0	8	0	4	0	5
16	11	80	26	2000	37
0	3	0	0	0	7
17	11	85	26	3000	37
0	8	0	5	0	9
18	12	90	26	4000	38
0	3	0	9	0	0
19	12	95	27	5000	38
0	7	0	4	0	1
200			278	75000	
	132	1000			382
210			285		384
	136	1100		1000000	

*Source: Krejcie & Morgan (1970, as cited by Amin, 2005)*

Note.—*N* is population size.

*S* is sample size.