

**FACTORS INFLUENCING THE TIMING OF POSTNATAL CARE  
SERVICES IN KENYA**

**BY**

**NANCY KOSGEY**  
**Q50/71077/07**



**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT  
OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE  
OF THE MASTER OF ARTS IN POPULATION STUDIES,  
UNIVERSITY OF NAIROBI**

University of NAIROBI Library



0300349 8

**NOVEMBER, 2009**

## DECLARATION

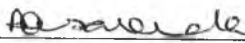
I declare that this project is the result of my own work and that it has not been submitted either wholly or part to this or other University for the award of any degree.

Signature  \_\_\_\_\_

Date 30/11/2009

NANCY KOSGEY

This proposal has been submitted for examination with our approval as the University supervisors:

Signature  \_\_\_\_\_  
DR. ANNE KHASAKHALA

Date 30/11/2009

Signature  \_\_\_\_\_  
DR. LAWRENCE IKAMARI

Date 30.11.09

Population Studies and Research Institute

University of Nairobi

## **DEDICATION**

I would like to dedicate my work to my lovely children, Felix, Nixon and Anita who in good and bad times were there for me. They have been my aspirators throughout the journey. May the almighty God bless them all

## ACKNOWLEDGEMENTS

I would like to acknowledge the almighty God who gave me wisdom and grace that saw me throughout my studies. To God is the glory. To my supervisors, Dr Anne Khasakhala and Dr. Lawrence Ikamari for the patience, guidance and commitment that helped me attained this degree. I cannot take their valuable input for granted, God bless them abundantly.

I acknowledge my parents, Mr. and Mrs. Richard Chepkoimet, for their support through prayers and taking care of my children. To my brothers, sisters, and family members and friends, thank you all for being there for me when I needed you most.

My classmates in the 2007-2009 MA class with whom we worked together in group discussions as well as ensuring that tasks were completed in time. I wouldn't have made it alone without your support.

Finally a special acknowledgement goes to my children Felix, Nixon and Anita for enduring my absence during study period.

## TABLE OF CONTENTS

DECLARATION .....	ii
DEDICATION.....	iii
ACKNOWLEDGEMENTS.....	iv
TABLE OF CONTENTS .....	v
LIST OF TABLES.....	vii
LIST OF FIGURES .....	viii
ABSTRACT .....	ix
CHAPTER ONE: INTRODUCTION AND PROBLEM STATEMENT .....	1
1.0 Introduction.....	1
1.2 Problem Statement.....	3
1.3 Research Questions.....	4
1.4 General Objective .....	5
1.5 Specific Objectives .....	5
1.6 Justification.....	5
1.7 Scope and Limitation of the Study .....	6
CHAPTER TWO: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK.....	7
2.0 Introduction.....	7
2.1 Postnatal care services in the world.....	7
2.2 Postnatal care in Kenya .....	12
2.3 Conceptual Framework.....	14
2.4 Conclusion of Literature review .....	18
CHAPTER THREE: METHODOLOGY .....	19
3.0 Data and Methodology .....	19
3.1 Data source .....	19
3.2 Methods of Data Analysis .....	19
3.3 Description of variables.....	19
3.3.1 Dependent variable .....	19

3.3.2 Independent variables .....	20
3.3.2.1 Maternal education .....	20
3.3.2.2 Region of residence .....	20
3.3.2.3 Type of place of residence .....	20
3.3.2.4 Decision on use of family planning .....	20
3.3.2.5 Mother's age .....	20
3.3.2.6 Marital status .....	20
CHAPTER FOUR: FACTORS INFLUENCING THE TIMING OF UPTAKE OF POSTNATAL CARE SERVICES .....	21
4.0 Introduction.....	21
4.1 Characteristics of the study population.....	21
4.2. Differentials in uptake of postnatal care services .....	22
4.3 Regression Analysis Results.....	25
4.4 Discussions .....	27
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMENDATIONS.....	29
5.0 Introduction.....	29
5.1 Summary .....	29
5.2 Conclusions.....	30
5.3 Recommendations for research.....	30
5.4 Recommendationsfor policy .....	30
REFERENCES .....	31
APPENDIX 1: Further differentials in the uptake of professional postnatal services according to selected variables .....	33

## LIST OF TABLES

Table 4.1 Background Characteristics of the Study Population .....	22
Table 4.2 Differentials in the timing of uptake of professional postnatal care services....	24
Table 4.3 Logistic Regression results .....	26

## LIST OF FIGURES

Figure 2.1 Conceptual Framework for analyzing the timing of utilization of postnatal care services .....	16
Figure 2.2 Operational framework of the study (Adopted from McCarthy and Maine, 1992).....	17



## ABSTRACT

Proper timing of postnatal care services is a crucial step towards reduction of maternal mortality. The study sorts to identify socioeconomic, cultural and demographic factors that influence the timing of postnatal care services in Kenya. Secondary data from KDHS 2003 was used where a total of 8195 women aged 15-49 years were sampled. This study only focuses on 2206 women who had non institutional live births. The survey collected data on women who utilized postnatal care after delivery. Out of 2206 women who had non institutional delivery only 411 women sought postnatal care services. The methods of data analysis used were frequencies to show the characteristics of the study population and cross tabulation to show the differentials and logistic regression used to assess the effects of the variables on the timing of uptake of postnatal care services.

Key results from the logistic regression analysis shows that maternal education was a key factor determining the uptake of postnatal professional care among the women who delivered outside the health facilities in Kenya. Women with primary education were more likely to utilize the uptake of postnatal care services than women with no education within 2 days after delivery while those with at least secondary education were more likely to seek postnatal care services than women with no education.

In the case of bivariate analysis significant regional variation in the timing of uptake of postnatal professional care services are evident. Women in Nyanza, Rift Valley, Western and North Eastern province were significantly less likely to seek postnatal professional health care services within 2 days after delivery. There is no significant difference in the behavior of women in Nairobi and those in Central, Coast and Eastern with respect to the timing of the uptake of postnatal professional care

services within 2 days after delivery outside health facilities. The rest of the variables included in the logistic model do not show any statistical significance.

The study concluded that there are significant differentials in the timing of uptake of professional postnatal care according to educational attainment and region of residence in Kenya.

The study recommends that further research be done to find out the low uptake of postnatal professional care services within 2 days after delivery in Kenya, and to find out why primary educated women are more likely than secondary educated women to seek health care after delivery

This study recommends the government to intensify campaigns to increase the early uptake of postnatal care services among women who deliver outside health institutions in Kenya. These campaigns should be more intense in provinces such as Western, Rift Valley and North Eastern where early uptake of postnatal professional services is relatively low.

# CHAPTER ONE: INTRODUCTION AND PROBLEM STATEMENT

## 1.0 Introduction

The period of six weeks following delivery is known as puerperium. In developing countries many mothers experience serious health problems requiring professional care during the postpartum period. Studies shows that care during postnatal women receive less research attention than antenatal and delivery even though this is the period when most maternal death occurs (Fauveau et al, 1989, Good burn et al. 1995). Millions of women are involved in maternal death during this period. Postnatal care is not yet routine in most developing countries. The care during puerperium for the woman has influence on maternal deaths if the woman does not attend postnatal care services and yet this is one of the most important maternal health-care services for not only prevention of impairment and disabilities but also reduction of maternal mortality.

Postnatal care is the routine care services that every woman and her baby should be offered, appropriate to their individual circumstances after the birth of the baby until the conclusion of the postnatal period. This period is currently defined as 6 to 8 weeks after birth. Every woman should at least visit postnatal care service twice, one after 48 hours and another should occur within 3-7 days after delivery or later.

The world health organization (WHO) defines maternal mortality as a death during pregnancy or within 42 days after pregnancy from causes related to or aggravated by pregnancy or its management (WHO 1985). Maternal death is defined as any death that occurs during pregnancy, childbirth or within two months after the birth or termination of a pregnancy.

Estimates of maternal mortality are therefore based solely on the timing of death in relationship with pregnancy (KDHS, 2003). The majority of maternal death occur during postpartum period, that is after birth with postpartum hemorrhage being the major cause of death and the kind of complications following childbirth such as chronic pain, impaired morbidity, damages to reproductive system, genital prolepses and infertility are also common in developing countries.

The maternal mortality ratio for Kenya was estimated to be 590 deaths per 100,000 live births in 1998 KDHS and dropped to 414 deaths per 100,000 in 2003 (NCPD et al, 2003). Maternal mortality is a number of maternal deaths in a given period per 100,000 women of reproductive age during the same period. Maternal mortality ratio is the ratio of the number of maternal deaths per 100,000 live births.

The government of Kenya has committed itself to attaining the global health millennium development goal five of improving maternal health by reducing the maternal mortality rate by three quarters between 1990 and 2015. The progress towards achieving this goal has been slow because of inadequate funding allocated to health care services and reduction of donor funding. The government of Kenya has invited other key health actors for direct or indirect support to fund the healthcare programmes in the country. This has led to construction of health facilities all over the country.

Despite the availability of health care services, the timing of postnatal care services is still far below the accepted standard. It is evident from empirical studies that the timing of postnatal care services is related to the availability, quality and the cost of services as well as the social structure, health beliefs and personal characteristics of the users (KSPA, 2004).

## 1.2 Problem Statement

Millions of women lack access to reproductive health care services in developing countries. The situation has been universally recognized as a leading cause of maternal mortality and morbidity. The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) estimates that a woman's risk of dying from maternal causes is 1 in 16 in Africa, while a woman's risk is 1 in 1400 in Europe. Millions of women suffer from injuries and disabilities from maternal causes for the rest of their lives. This could be reduced if women had access to the right timing of postnatal care services. Although almost all pregnant women receive some antenatal care services from health professionals very few women time postnatal professional care services.

Despite the availability of health care services, most women do not time postnatal care services after delivery in Kenya. It is evidence from empirical studies that the timing of health care services is related to availability, quality and the cost of services as well as the social structure, health beliefs and personal characteristics of the women (KSPA, 2004). In Kenya women do not always time postnatal care services because health care providers appear reluctant to provide especially in busy units. Most men are not even aware that women require postpartum care and believe it is only for the baby. With reference to 2003 KDHS, about 81 percent of women who deliver outside a health facility did not time postnatal care. Only 10 percent time postnatal care within two days of delivery, while 2 percent time postnatal care three to six days after delivery and 7 percent time for professional check up seven to 41 days after delivery. The 2004, Kenya Services Provision Assessment (KSPA) emphasizes that women receive postnatal care services within 48 hrs of delivery for early diagnosis of postpartum complications.

Although most mothers do not experience complications during childbirth, complications that require immediate action could occur after delivery.

Postnatal care uptake is important for maternal health particularly in areas where child birth complications arise. The postnatal care services are to support the mother and her family in transition to a new family constellation and response to the family needs, prevention, early diagnosis and treatment of complications of mother and infant, prevention of vertical transmission of diseases from mother to infant and referral of mother and infant for specialized care when necessary, counseling on maternal nutrition and supplementation. The care services also include counseling and service provision for family planning and resumption of sexual activity and immunization of infant.

The timing of maternal and child health services such as postnatal care improves the health and well being of women. Postnatal care is a potentially important way to connect a woman with health system which is functioning and will be critical for saving her life in the event of complication. It is important that mothers attend postnatal care services after delivery where professional services and hygienic conditions can reduce the risk that may cause death or serious illness.

Despite the availability and accessibility to postnatal care services few women did time postnatal care services (KDHS, 2003). Therefore the main focus of the study is to identify the factors that influence the timing of postnatal care services in Kenya.

### **1.3 Research Questions**

What are the socio-economic factors that influence the timing of the uptake of postnatal care services in Kenya?

What are the socio-cultural factors that influence the timing of the uptake of postnatal care services in Kenya?

What are demographic factors that influence the timing of the uptake of postnatal care services in Kenya?

#### **1.4 General Objective**

To identify factors that influences the timing of the uptake of postnatal care services in Kenya.

#### **1.5 Specific Objectives**

To establish the socio-economic factors that influence the timing of the uptake of postnatal care services in Kenya.

To establish socio-cultural factors that influence the timing of the uptake of postnatal care services in Kenya.

To establish demographic factors that influence the timing of the uptake of postnatal care services in Kenya.

#### **1.6 Justification**

Prenatal and postnatal health services improve the survival and quality of life for mothers and children but are only used by those who are in need yet this is supposed to be mandatory for women who have delivered. The timing of postnatal care is essential for treating and diagnosing complications arising after delivery. For non – institutional birth particularly, postnatal care enables detection of complications that may threaten the survival of the mother. The timing of postnatal care is important. To provide the best outcome possible a mother should seek postnatal services within two days after delivery

since this is the time when most maternal death occurs. There is inadequate information on the timing of uptake of postnatal care services in Kenya.

The results of the study will benefit women aged 15-49 in reproductive ages so that they can make adequate timing of health care services after delivery. The study is important because it will help to know the extent of timing of the uptake of postnatal care services and the factors associated with it. It will also enhance the level of understanding for government and policy makers to set up interventions to improve the uptake of postnatal care services in Kenya.

### **1.7 Scope and Limitation of the Study**

The study is limited to secondary data obtained from the KDHS 2003 survey in which a total of 8195 women aged 15-49 were interviewed. The study however, focuses on 2206 women who delivered outside health facilities during the five years preceding the survey. Due to lack of data, the study did not investigate the type of postnatal services sought. Secondly it was not possible to know why some women sought services late or not at all.



# CHAPTER TWO: LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

## 2.0 Introduction

The chapter outlines the literature available that concerns the timing of postnatal care services among women in the world and later narrows it to Kenya.

## 2.1 Postnatal care services in the world

An estimated 529,000 women die from the complications of pregnancy and childbirth in the year 2000. For every woman who dies, approximately 20 more were seriously injured or disabled. It means that close to 9 million women suffer some types of injury from pregnancy or childbirth that can have a profound effect on their lives and their families. Many factors determined women's nutritional status and uptake of health care services. These factors are dietary intake, illness, early and frequent childbearing, strenuous work or physical activity and women's status in the society (Leslie, 1991).

In developing countries women account for more than half the food producers and many rural women work up to eighteen hours a day. Women are increasingly entering the labor force, but most remain in highly segregated low paid jobs. These sense of personal security and consequently affect their reproductive health status and decisions (Ford Foundation, 1991).

Pregnancy outcome is influenced by the reproductive health status and the health of the mother, including her nutritional status as well the uptake of postnatal care services. The timing of the uptake of postnatal health care is influenced by a wide range of cultural, socio-economic and demographic factors relating to the individual women her

household and the community in which she lives, including health service accessibility. Graham and Murray (1997), summarized the interrelationships between the factors and said that motherhood be broadened, particularly in the early 1990s, to include the range of factors regarded as determinants of poor uptake of maternal health, with women's low socio-economic status seen as one of the root causes of maternal deaths due to none uptake of postnatal care services. There is widespread recognition that the causes of maternal deaths cannot be considered simply in terms of final medical diagnosis but also include the whole complex of social, cultural, economic, demographic, legal and political factors which help to define women's status and in many situations, condemn them to lifelong suffering and inequality. It is also well proven that reproductive behavior influences women's risks of adverse pregnancy outcomes. The provision and timing of utilization of health care plays a key role through appropriate management of normal pregnancies and deliveries. Therefore preventing complications through effective care once they have arisen will reduce deaths associated with lack of timing of postnatal care services.

The uptake of postnatal care services provides an opportunity for women to obtain critical health and nutritional information and services. The timing of the uptake of postnatal within 48 hours of delivery is good for early diagnosis of postpartum complaints. It also provides opportunity to counsel the new mother on family planning and caring for herself and her newborn for any problem.

The knowledge and awareness of HIV/AIDS prevention is a measure of women's access and timing of utilization of health care services. The access and timing of health

care is critical in ensuring that maternal health both during pregnancy, childbirth and postpartum is well taken care of.

Abbas and Walker, (1986), did a survey about health service utilization and found out that women's education was strongly correlated with clinic use and walking to health facility without negotiating access to transport increases the utilization of health care services. Apart from those factors, delay in the uptake of health care services is also influenced by cost and time of travel, distribution of hospitals and dispensaries, the conditions of roads and reliability of vehicles and physical distance between women in need.

In Africa coverage for postpartum care in most parts does not exceed 40 percent even in urban areas. Latin America is slightly higher than Africa and Asia. Women seem the most likely to time postpartum clinic in Latin America than in Africa. In Africa data is scarce and information is not available on types of providers who are serving neither woman in the period of postpartum or women reasons for not seeking and timing such health care (World Health Organization; 1993).

Women living in rural areas and having no education do not see the need for using postnatal care services , while differences in age, parity and birth interval are less consistent in determining coverage rates. (Godvindasamy, et al, 1993). Age plays an important role in the timing of utilization of health care services. Maternal age influences the timing of the uptake of health care services. Fielder, (1981) indicated that maternal age sometime serve as a proxy for the women's accumulated knowledge of health care services which have a positive influence on the timing of postnatal care services.

Maternal age at marriage may also influence the timing of utilization of health care services. The number of previous pregnancies or birth order also influences the utilization of health care services. Having more children may also cause resource constraints which will affect utilization (Wong et al 1987).

Maternal education has a positive impact the timing of the uptake of health care services (ELO 1992). Because of education and knowledge at present more young women may time the use of health care services and modern medicine. The 1985 United Nations Comparative Study on effects of socio economic factors in Nigeria and Peru indicated that access, timing and utilization of health care services were positively associated with maternal education.

Using the data from the National Family Health Survey 1992-93, Govindasamy and Ramash (1997) found a positive relationship between mother's education and utilization most significant predictor of timing of utilization of health care services. The study found out that the higher the level of education results in improved utilization of health care services a substantial extent because the preventive health care are used to a greater extent by mother's with higher education than those than those with no education or pre school.

In India, Basu, (1990) noted that fear and physical inconvenience of postnatal care services were predominant reasons among Indian mothers for reluctance to have postnatal care. A study done in India on determinants of maternal health care, Bhatia and Cleland, (1995) confirmed the important role played by socioeconomic factors on use and timing of health care services. Higher maternal education and higher levels of personal hygiene were observed to be associated with significantly higher probability of routine

postnatal care, while women in low caste were observed to have reduced probabilities of routine postnatal care.

In Philippines Safe Motherhood Survey of 1993, women who had their first births, with college education and live in urban areas most saw a doctor, while those with primary education and live in rural areas, more often sought services from a midwife or a traditional birth attendant and were more likely to receive fewer components of post natal care (UNICEF, 1993). According to a study done in Nepal on timing of postnatal care among the rural women was that lack of awareness was the main barrier to utilization of postnatal care.

In India, the level of political awareness were found to explain differential access to, demand for, timing of utilization of health services, after income differences were controlled for (Nag, 1989). In situations where women were forced to take up market employment, women not only continue to bear the burden of domestic work, but also as lower wages, less regular employment and higher level of underemployment than men. In such situations, women's employment may do little, if any to strengthen their capabilities to implement reproductive preferences (Bruce and Dwyer, 1988).

In some studies done by Trakroo, (1993) and Celik, (2000), employment status or occupation and ethnicity have also been found important determinants of the timing of utilization of postnatal care services.

Millennium development goal of 2000 set the targets that improving maternal health by reducing the maternal mortality ratio rate by three quarters between 1990 and 2015. In 1999, WHO, UNFPA/UNICEF/WORLD BANK called on countries to ensure that all women and new born have skilled care during pregnancy, childbirth and



immediate postnatal care period. World wide approximately 600,000 women die annually from pregnancy and child birth related illness.

## **2.2 Postnatal care in Kenya**

In Kenya maternal mortality was estimated at 670 in 1990, 590 in 1998 and 414 per 100,000 in 2003 (CBS et al, 2003). It is estimated that approximately 14,700 women die every year due to pregnancy and childbirth complications, while between 29,400 and 44,000 suffer from disabilities caused by complications during pregnancy and childbirth.

The 2003 KDHS, showed marked provincial differentials in postnatal care coverage. Nyanza province shows the highest proportion of women with non-institutional births obtaining postnatal care services within two days of births 20 percent compared with Eastern 4 percent and North Eastern one percent. According to Kenya Service Provision Assessment (KSPA) study done in 2004 only 5 percent of facilities offering antenatal care services have up to date registers for postnatal care services.

In 1994, the Government of Kenya approved the Kenya Health Policy Framework as a blue print for developing and managing health services. The policy spells out strategic imperative and agenda for Kenya's health sector. To operational, the Ministry of Health developed policy framework to guide the implementation of health policies in response to the constraints being experienced in health sector. The main components of reproductive health include safe motherhood (antenatal care, clean and safe delivery, postnatal care and essential obstetric care) and child survival, family planning unmet need, management of STD's and HIV/AIDS, promotion of adolescent and youth health, management of infertility, gender issues and reproductive organs. Safe motherhood goals proposed in the national strategy include a reduction of maternal mortality ratio from 365

in the early 1990 to 170 deaths per 100,000 live births by year 2010 to reduce prenatal mortality rate from the current estimates of 45 per 1000 live births to less than 30 per 100,000 by year 2010 and establish the magnitude of maternal and prenatal morbidity and mortality (MOH. 1996).

The development of first National Health Sector Strategic Plan for the period 1999-2000 was a follow up to the Ministry of Health efforts to translate the policy objectives into implementation programmes. Despite the well focused national health policies and reform agenda whose strategies were focused on improving health care services and systems through effective and efficient health management the implementation of NHSSP-1 did not succeed so it led to development of the second National Health Sector Strategic Plan of 2005-2010. Some of the scholars talk about the factors that influence the timing of postnatal care services in Kenya.

Abuya, (2002) states that the resources available both to family and community determine the access to which women have post natal care services. The cultural set up too influences the health care behavior and timing of utilization of health services. The modern healthcare services may be available but if culture prohibits some practices, then women may not use them.

Previous studies have observed that factors predicting the timing of the uptake of postnatal care include cultural, socioeconomic, demographic and service accessibility factors. Low maternal or paternal educational attainment, low socioeconomic status, rural residence, young maternal age and high order births have been observed to be associated with low uptake of postnatal care services. It is important, however to understand the specific factors that are in various settings, since these may vary considerably.

Magadi, (1999) viewed that distance and accessibility of services exert an influence on the use and timing of health care services. Long distance or inaccessibility of services can be an actual obstacle to reaching a health facility or can be a disincentive to even trying to time care. The issue of access is a problem for rural inhabitants in most developing countries.

Increase in income has a positive effect on the timing of utilization of postnatal care services. Mothers from wealthy families are expected to seek health care when they are sick with maternal complications than those who are not from wealthy families (Kiage, 1999).

Mother's marital status sometimes serve as a proxy for educational and social class and have a positive impact on the timing of maternal care services. Use of postnatal care services is higher among women who are married (Ngeresa, 2007).

Geographical accessibility is likely to be more important determinants of timing of health care services and also the affordability to the users is important. Perceived reliability of facility, efficiency which includes satisfaction, time taken to receive treatment and quality of interaction with health care providers is regarded by most users as major index in timing postnatal care services. Overcrowding also is another contributor

### **2.3 Conceptual Framework**

This study will generally be based on McCarthy and Maine (1992) framework. The study focuses on individual women irrespective of their marital status, age, cultural background, and other characteristics.



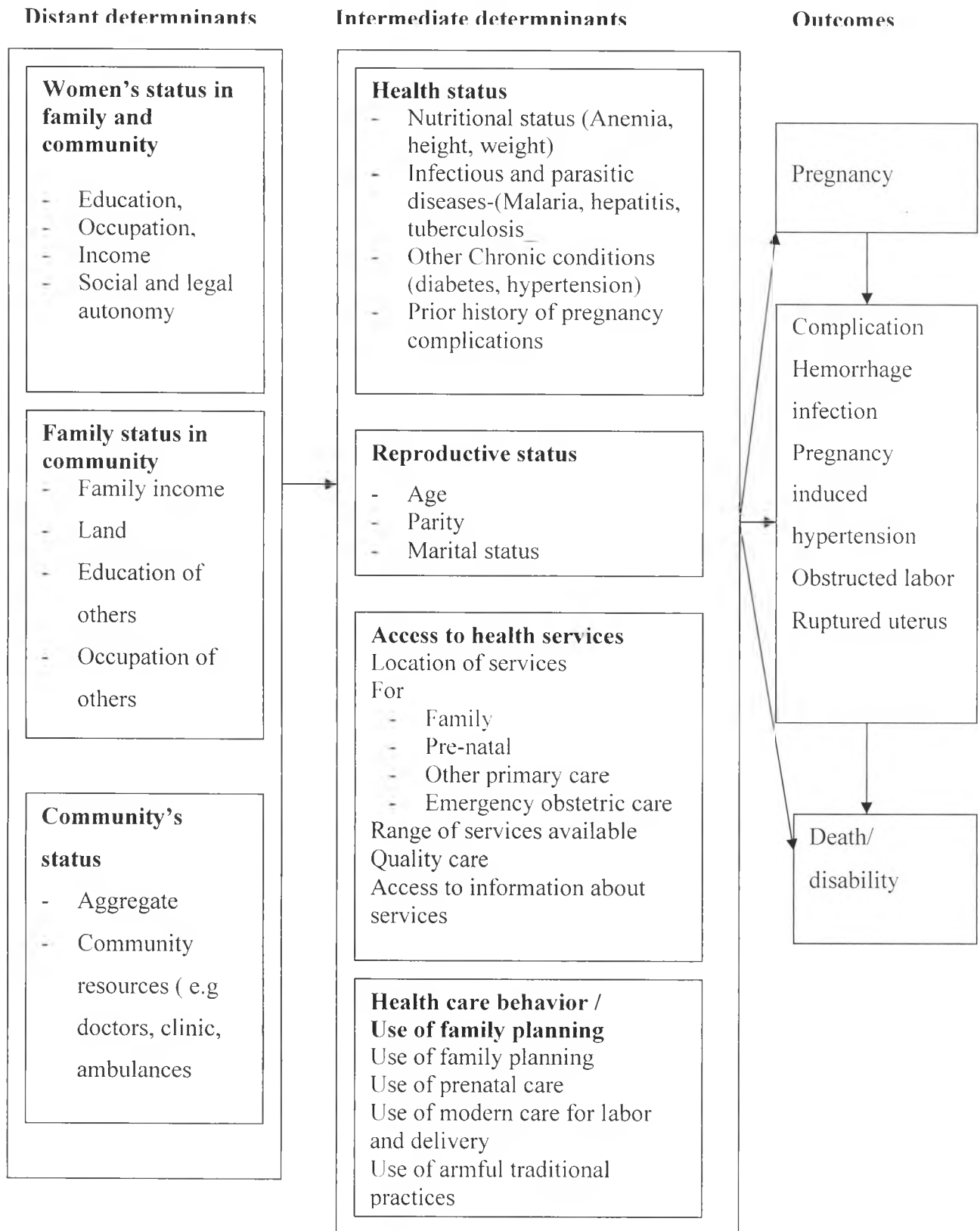
Various scholars have made attempts to explain factors influencing the timing of uptake of health care services. These are Kroger, (1983), McKinley, (1972) and Thaddeus and Maine, (1994).

Kroger (1983) proposed the determinants of timing of the uptake of postnatal care services in developing world and grouped those under three headings. These are, predisposing factors age, sex, household composition and size, ethnic groups and affiliation and education. The other is the characteristics of illness, expected benefits from treatment and beliefs from causation and lastly characteristics of health care system, including cost and quality of care.

McKinley (1972) identifies six factors that influence the health seeking behavior. These are economic dimension which relate to financial barriers, socio-demographic factors that emphasizes age, parity, gender and education, socio-economic factors which involves motivation to seek health care services. Others are socio-cultural factors such as norms, values, lifestyles, beliefs and effects of health care organizations.

McCarthy and Maine (1992) indicate that postnatal care services context delineated three phase of delay which are barriers to health care. These are delays in seeking care both on the part of the individual or family, or both, delay in reaching an adequate health care facility and delay in receiving adequate care of the facility. The decision making process in family is critical and relevant not only in family dynamics and power relations but access to resources and concerning affordability of health care.

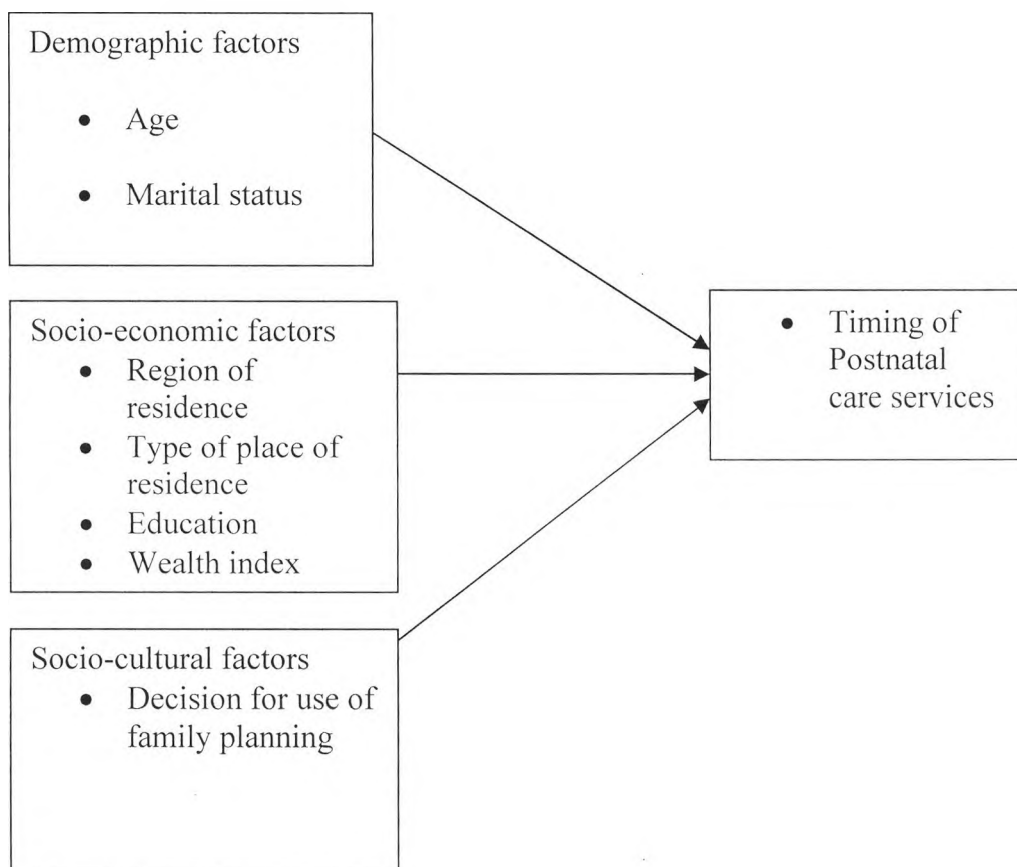
**Figure 2.1 Conceptual Framework for analyzing the timing of utilization of postnatal care services**



This study will use the operational framework as modified from McCarthy and Maine (1992). The dependent variable will be the timing of the uptake of postnatal care services within two days after delivery. The independent variables will be grouped under socio-economic, demographic and social cultural. The socio-economic variables are region of residence, type of place of residence, education and wealth index.

The demographic factors are age, and marital status. Socio-economic factors are region of residence, type of place of residence, and education. Socio-cultural factors are use of family planning.

**Figure 2.2 Operational framework of the study (Adopted from McCarthy and Maine, 1992)**



## **2.4 Conclusion of Literature review**

Based on the information given by various scholars it is important to carry out a study so as to fill the gap in information on whether there is a link between timing of the uptake of postnatal care services and the characteristics of persons seeking the services. It is also important to emphasize the significance of linking maternal education, decision for use of family planning, age of respondent, marital status to the timing of utilization of postnatal care services.

## CHAPTER THREE

### METHODOLOGY

#### 3.0 Data and Methodology

This chapter outlines the data to be used in this study as well as the methodology to be used for analysis. It also contains data's characteristics and quality.

#### 3.1 Data source

This study used data drawn from the KDHS 2003 in which a total of 8195 women aged 15-49 were interviewed. For the purpose of this study, a total of 2206 women were considered. These were women who delivered outside health facilities during the five years preceding the survey.

#### 3.2 Methods of Data Analysis

This study used frequencies, cross tabulations and logistic regression analysis. Frequencies were used to establish the characteristics of the study respondents. Cross tabulations were used to show the differentials in use and none use of the timing of uptake of postnatal care services. Logistic regression was used to assess the effects of the variables on the timing of uptake of postnatal care services.

#### 3.3 Description of variables

##### 3.3.1 Dependent variable

The dependent variable will be the timing of the uptake of postnatal care services after delivery. In the logistic regression analysis this will be coded as 1 if the woman sought postnatal professional check up within two days after delivery, zero otherwise.

### **3.3.2 Independent variables**

The independent variables are classified into socio-economic (region of residence, type of place of residence, education, wealth index), socio-cultural (decision for use of family planning) and demographic factors (maternal age, marital status),

#### **3.3.2.1 Maternal education**

This refers to the level of education where a mother has reached.

#### **3.3.2.2 Region of residence**

This refers to the usual region of residence of the respondent

#### **3.3.2.3 Type of place of residence**

This is to be grouped as urban or rural. Urban is taken as reference category and rural as other.

#### **3.3.2.4 Decision on use of family planning**

This is where the respondent made a decision to use family planning alone, jointly with her partner, or mainly partner

#### **3.3.2.5 Mother's age**

Mother's age refers to age of the mother at birth

#### **3.3.2.6 Marital status**

This is categories as never married being reference. Currently and formerly as other category

## **CHAPTER FOUR: FACTORS INFLUENCING THE TIMING OF UPTAKE OF POSTNATAL CARE SERVICES**

### **4.0 Introduction**

This chapter presents the results of the study. The chapter begins with the background characteristics of the study population. This is followed by the presentation on the differentials in the uptake of the postnatal care services.

### **4.1 Characteristics of the study population**

Table 4.1 below indicates that women who had attained primary education were 60.2 percent, those with no education/pre school, 28.6 percent and those with secondary education and above were 11.2 percent. The majority of the women were from Rift Valley, Western province with 15.4 percent and the least were from Nairobi with 3.8 percent. Women in the rural areas were the majority with 85.2 percent and urban were 14.8 percent.

Women from low indexed households were the majority with 56.6 percent and the least were from the middle indexed with 19.7 percent. Women who made joint decision with their partners were the majority with 59.2 percent and the least were women with mainly husband/ partner decisions 12.2 percent. Currently married women were the majority with 84.5 percent, formerly married was 9.7 percent and the least were never married with only 5.8 percent. Women aged 25-34 were the majority with 44.2 percent; 15-24 with 33.0 percent and 35 and above were the least with 28.8 percent.

**Table 4.1 Background Characteristics of the Study Population**

<b>Characteristics</b>	<b>Number</b>	<b>Percentage</b>
<b>Maternal education</b>		
No education/pre school	630	28.6
Primary	1329	60.2
Secondary+	247	11.2
<b>Region</b>		
Nairobi	83	3.8
Central	177	8.0
Coast	306	13.9
Eastern	277	12.6
Nyanza	303	13.7
Rift Valley	488	22.1
Western	340	15.4
North Eastern	232	10.5
<b>Type of place of Residence</b>		
Urban	327	14.8
Rural	1879	85.2
<b>Wealth Index</b>		
Low	1249	56.6
Middle	434	19.7
High	523	23.7
<b>Decision making using FP</b>		
Mainly respondent	153	28.6
Mainly husband, partner	49	12.2
Joint decision	253	59.2
<b>Marital status</b>		
Never married	128	5.8
Currently married	1865	84.5
Formerly married	213	9.7
<b>Maternal age group</b>		
15-24	727	33.0
25-34	975	44.2
35+	504	28.8

#### **4.2. Differentials in uptake of postnatal care services**

This section presents the results of bivariate analysis on the association between the uptake of postnatal care services and each of the study variables. The results are presented in Table 4.2. Chi square tests show that there is a statistical significant between education and the timing of the uptake of postnatal professional check up. The result



shows that as level of education goes up women are more likely to seek postnatal care services.

The results obtained show a statistical significant association between the region of residence and the uptake of postnatal services. Among the women who delivered outside the health facilities women in Nyanza province were more likely to seek professional postnatal check up during the first two days after delivery. The women in Nairobi and Central provinces were also shown to have a high tendency to seek postnatal health care soon after delivery.

The type of residence has no statistically significant association with the timing of uptake of postnatal care services. There is statistical significant association between wealth index and postnatal seeking behaviors. Women from high indexed households were more likely to seek postnatal care with 48 hours after delivery compared with women from middle or lower wealth indexed households. The results obtained shows that there is no statistical significant association between decision making using family planning and the timing of the uptake of postnatal professional services. Similarly there is no statistical significant association between marital status and the timing of the uptake of professional postnatal care services.

Finally the results show that there is no statistical significant association between the age of the mother and the timing of the uptake of professional care services among women who delivered outside health facilities in Kenya. Further results in the differentials in the timing of the uptake of professional care services are presented in the appendix I.

**Table 4.2 Differentials in the timing of uptake of professional postnatal care services**

	<b>Never time professional check up</b>		<b>Time professional check up</b>	
	<b>No</b>	<b>%</b>	<b>No</b>	<b>%</b>
<b>Maternal education</b>				
No education/pre school	561	89.0	69	11.0
Primary	1059	79.7	270	20.0
Secondary+	175	70.9	72	29.1
$X^2 = 45.019$	Df = 2		Sg. = 0.000	
<b>Region of residence</b>				
Nairobi	61	73.5	22	26.5
Central	134	75.7	43	24.3
Coast	257	84.0	49	16.0
Eastern	253	91.0	24	8.7
Nyanza	202	66.7	101	33.3
Rift Valley	401	82.2	87	17.8
Western	270	79.4	70	20.6
North Eastern	217	93.7	15	6.5
$X^2 = 93.593$	Df = 7		Sg. = 0.000	
<b>Type of place of residence</b>				
Urban	258	78.9	69	21.1
Rural	1537	81.8	342	18.2
$X^2 = 1.545$	df = 1		Sg. = 0.214	
<b>Wealth index</b>				
Low	1043	83.5	206	16.5
Middle	356	82.0	78	18.0
High	396	75.7	127	24.3
$X^2 = 14.910$	Df = 2		Sg. = 0.000	
<b>Decision making using FP</b>				
Mainly respondent	125	81.7	28	18.3
Mainly husband/partner	37	75.5	12	24.5
Joint decision	195	77.1	58	22.9
$X^2 = 1.766$	df = 3		Sg. = 0.622	
<b>Marital status</b>				
Never married	97	75.8	31	24.2
Currently married	1528	81.9	337	18.1
Formerly married	170	79.8	43	20.2
$X^2 = 3.364$	df = 2		Sg. = .186	
<b>Maternal age at birth</b>				
15-24	588	80.9	139	19.1
25-34	794	81.4	181	18.6
35+	413	81.9	91	18.1
$X^2 = .227$	df = 2		Sg. = 0.892	

### 4.3 Regression Analysis Results

Table 4.3 below presents the results obtained from fitting a logistic regression model in the timing of the uptake of postnatal professional check-up. As indicated earlier, the timing of the uptake of postnatal care was a binary response variable which takes a value one (1) of the mother who sought postnatal check up within 2 days after delivery, zero (0) otherwise. The result shows that maternal education was a key factor determining the uptake of postnatal professional care among the women who delivered outside the health facilities in Kenya. Women with primary education were indicated to be 2.6 times as likely as women with no education to seek postnatal professional care services with 2 days after delivery while those with at least secondary education were 1.8 times as likely as those with no education.

As in the case of bivariate analysis significant regional variation in the timing of uptake of postnatal professional care services are evident in table 4.3. Women in Nyanza, Rift Valley, Western and North Eastern province were significantly less likely to seek for postnatal professional health care services within 2 days after delivery. There is no significant difference in the behavior of women in Nairobi and those in Central, Coast and Eastern with respect to the timing of the uptake of postnatal professional care services within 2 days after delivery outside health facilities. The rest of the variables included in the logistic model do not show any statistical significance.

**Table 4.3 Logistic Regression results**

<b>Maternal education</b>	<b>B (Regression coefficient)</b>	<b>EXP(B) (Odd ratios)</b>
No education/Pre School (RC)		
Primary	.957	2.610*
Secondary+	.570	1.768*
<b>Region</b>		
Nairobi (RC)		
Central	-.058	1.060
Coast	.052	1.054
Eastern	-.222	.801
Nyanza	-.329	.720*
Rift Valley	-1.063	.345*
Western	-.962	.382*
North Eastern	.998	.369*
<b>Type of place of Residence</b>		
Urban(RC)		
Rural	-.109	.897
<b>Wealth Index</b>		
Low(RC)		
Middle	.124	1.132
High	.103	1.109
<b>Decision for using family planning</b>		
Mainly respondent(RC)		
Mainly husd/part	.288	1.333
Joint decision	.	1.000
<b>Marital Status</b>		
Never married(RC)		
Currently married	.048	1.049
Formerly married	-.501	.606
<b>Maternal age at birth</b>		
15-24 (RC)		
25-34	-.294	.745
35+	.147	1.159

RC = Reference Category

\*\* P < 0.1, \* p <= 0.05

#### 4.4 Discussion

Results from logistic regression show that mother's education was a key factor determining the uptake of postnatal professional check up services within 2 days after delivery among women who had a non-institutional delivery. Women who had primary level of education were almost three times as likely as more to utilize postnatal care services than women with no education within 2 days. Abbas and Walker (1986) found that seeking of post natal care services was more common among women with the highest level of education. The result indicates that women with higher education seek postnatal care services than women with lower education.

Maternal education has a positive impact the timing of the uptake of health care services (ELO 1992). Because of education and knowledge at present more young women may time the use of health care services and modern medicine. The 1985 United Nations Comparative Study on effects of socio economic factors in Nigeria and Peru indicated that access, timing and utilization of health care services were positively associated with maternal education.

Regional variation in the timing of uptake of postnatal check up among women who had a non-institutional birth in Kenya was also seen. Women in the less developed provinces were less likely to seek professional postnatal care within 2 days after delivery.

Magadi, (1999) viewed that distance and accessibility of services exert an influence on the use and timing of uptake of health care services. Long distance or inaccessibility of services can be an actual obstacle to reaching a health facility or can be a disincentive to even trying to time care. The women in developed regions are more likely to access the health care services as evident from the results.

Mbatia, (1996) found out that geographical accessibility was likely to be more important determinants of timing of health care services and also the affordability to the users was important. Perceived reliability of facility, efficiency which includes satisfaction, time taken to receive treatment and quality of interaction with health care providers was regarded by most users as major index in timing of uptake of postnatal care services. Overcrowding also was another contributor. This has been evident by results that women from developed regions in Kenya were able to time the uptake of postnatal care services.

## **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMENDATIONS**

### **5.0 Introduction**

This chapter sets out to present the summary of the study findings, conclusion and recommendations for further research and policy formulation.

### **5.1 Summary**

The study aimed at achieving the following three objectives; to determine socio-economic factors that influence the timing of the uptake of postnatal care services in Kenya, to identify demographic factors that influence the timing of postnatal care services in Kenya and to establish socio-cultural factors that influence the timing of postnatal care services in Kenya. The data for the study was extracted from KDHS 2003. The study population consisted of a sub-sample of 2206 women aged 15-49 who had none institutional live birth. The study adopted McCarthy and Maine framework

Chapter one introduced the study by giving the problem statement, scope and limitation of the study and justification; chapter two discusses literature review in the world and narrow down to Kenya on timing of postnatal care services and conceptual and operational framework were also discussed. Chapter three discusses the data and study methodology. Chapter four discussed the characteristics of the study population, associations and relationships between postnatal care services and study variables. Frequencies and percentages were used to discuss the characteristics of the study population; cross-tabulation was used to establish the association between timing of uptake of postnatal care services and study variables.

Results show that education was a key factor in delivery of uptake of postnatal professional check up services within 2 days after delivery among women who had a non- institutional delivery. Women who had primary level of education were almost three times as likely as women with no education to seek check up within 2 days. Regional variation in the timing of the uptake of postnatal check among women who had a non-institutional birth in Kenya were in less developed regions were less likely to seek professional postnatal care services within 2 days after non institutional delivery.

## **5.2 Conclusions**

There are significant differentials in the timing of uptake of professional postnatal care according to educational attainment and region of residence in Kenya.

## **5.3 Recommendations for research**

Further research is required to find out why there is low uptake of postnatal professional care services within 2 days after delivery in Kenya and to find out why primary educated women are more likely than secondary educated women to seek health care after delivery

## **5.4 Recommendations for policy**

This study recommends the government to intensify campaigns to increase the early uptake of postnatal care services among women who deliver outside health institutions in Kenya. These campaigns should be more intense in provinces such as Western, Rift Valley and North Eastern where the early uptake of postnatal professional services is relatively low.



## REFERENCES

1. Leslie, 1991. 'Woman's nutrition: The key to improving family health in developing countries, Health policy and planning'. Vol. 26 No.6 pp 213-18
2. Rustein, S 1996. 'Factors influencing the nutritional status of mothers and children in Sub-Saharan Africa': An analytical report based on the Demographic and Health surveys Calverton, Maryland, USA: Macro International. Inc.
3. Muturi, Marry Njeri. MA, Medical Sociology. Unpublicized thesis on Maternal Health Services components: An Evaluative Study of Amref Community Based Health Care Project in Laini Saba, Kibera.
4. WHO/UNFPA/UNICEF/WORLD BANK. 1999. Reducing Maternal Mortality: Geneva.
5. World Health Organization/United Nation's Children Fund. 2000. Maternal Mortality in 2000. Estimates developing by WHO, UNICEF, UNFPA
6. Marston C, Cleland J, 2003. The Effects of Contraception on Obstetrics outcomes. Geneva, World Health Organization.
7. Mccarthy James and Deborah Maine, (1992). 'A framework for analyzing the determinant of maternal mortality studies in family planning' vol. 23 No. 1 (Jan – Feb 1992) pp 230-33.
8. Kiage P (1999). Determinants of Maternal Mortality and Morbidity In Kenya. MA Thesis, population studies and Research Institute, University of Nairobi
9. Ngeresa A. (2007). Use of Antenatal services and Delivery Care in Kenya MA Thesis, Population Studies and Research Institute, University of Nairobi
10. World Health Organization, (1985). Maternal Mortality Rates A tabulation of available information. 2<sup>nd</sup> edition Geneva
11. 1989: Safe motherhood initiative. Report of second meeting of interest party, Geneva, WHO
12. International Council on population and Development (ICDP + 10). Kenya in Progress on population and development Program of action – 1994 – 2004
13. United Nations, 2005. The Millennium Development Goals, Report. New York, USA, 2006.

14. Population Studies and Research Institute and UNICEF, 1996. Kenya Maternal Mortality Baseline Survey 1994'
15. Fielder J.L. (1981). "A review of the literature on access and utilization of medical care with special emphasis on rural primary, care social science and medicine".
16. Central Bureau of Statistics (Kenya), Ministry of Health (MOH) [Kenya], National Coordinating Agency on Population and Development (NCAPD), ORC Macro.2004. Kenya Demographic Health Survey 2003, Calverton, Maryland: CBS, MOH & ORC Macro

## APPENDIX 1

### Further differentials in the uptake of professional postnatal services according to selected variables

	Within 2 day after delivery		3-7 days after delivery		8-41 days after delivery	
<b>Maternal education</b>	No	%	No	%	No	%
No edu/ pre school	24	35.8	14	20.9	29	43.3
Primary	134	50.0	48	17.9	86	32.1
Secondary+	46	63.9	6	8.3	21	27.8
$X^2 = 12.206$	df = 4		Sg. = 0.000			
<b>Region</b>						
Nairobi	8	36.4	6	27.3	8	36.4
Central	14	32.6	5	11.6	24	55.8
Coast	17	35.4	13	27.1	18	37.5
Eastern	10	43.5	1	4.3	12	52.2
Nyanza	62	61.4	14	13.9	25	24.8
Rift Valley	48	55.8	15	17.4	23	26.7
Western	41	59.4	10	14.5	18	26.1
North Eastern	4	26.7	4	26.7	7	46.7
$X^2 = 35.226$	df = 14		Sg. 0.000			
<b>Type of place of Residence</b>						
Urban	34	49.3	14	20.3	21	30.4
Rural	170	50.3	54	16.0	114	33.7
$X^2 = 0.839$	df = 2		Sg. = 0.658			
<b>Wealth index</b>						
Low	101	49.8	39	19.2	63	31.0
Middle	39	50.0	8	9.0	32	41.0
High	64	50.8	22	17.5	40	31.7
$X^2 = 5.421$	df = 4		Sg. = .247			
<b>Decision for using Family planning</b>						
Mainly respondent	16	57.1	6	21.4	6	21.4
Mainly husb/partner	6	50.0	3	25.0	3	25.0
Joint decision	29	50.0	7	12.1	22	37.9
$X^2 = 4.340$	df = 3		Sg. = 0.000			
<b>Marital Status</b>						
Never married	14	45.2	6	19.4	11	35.5
Currently married	173	51.8	54	16.2	107	32.0
Formerly married	18	40.5	8	19.0	17	40.5
$X^2 = 2.300$	df = 4		Sg. = 0.681			
<b>Maternal age at birth</b>						
15-24	76	56.3	20	14.8	39	28.9
25-34	84	46.4	32	17.1	66	36.5
35+	44	48.4	17	18.7	30	33.0
$X^2 = 3.441$	df = 4		Sg. = 0.487			