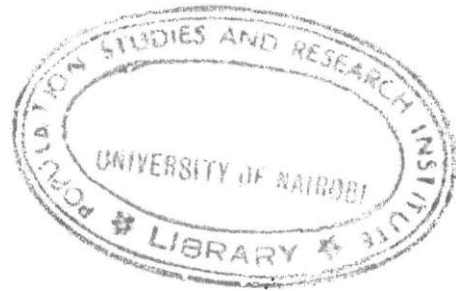


DETERMINANTS OF UNMET NEED FOR FAMILY PLANNING AMONG WOMEN IN RURAL KENYA



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**A PROJECT REPORT SUBMITTED IN PARTIAL FULFILLMENT FOR THE AWARD
OF MASTER OF ARTS DEGREE IN POPULATION STUDIES**

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UNIVERSITY OF NAIROBI**

2011

DECLARATION

This research is my original work and has not been submitted for any award in any university for academic credit.



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DEDICATION

To you my nieces *Leticia Keja* and *Usa Akama*

This remains your pillar of success, and your intentions to go beyond this level of academic achievement will be my pride.

I love to always see your ever jovial brilliance and active involvement. You grow like lilies on river banks, you blossom like rose flowers in the morning.

You deserve a lot.

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I also thank the PSRI fraternity, particularly lecturers and fellow students, for their concerted effort and support that came at the very critical moment of this project's development. I would mention all names, but the assistance of the Director, Dr. Lawrence Ikamari during my study and project work was immense. I am proud of my colleagues, Gilbert Omedi, Victor Esendi and Margie Mwaila, with whom we spent sunny and rainy endless weeks shaping our project papers.

Our family is always in my heart. Their immense contribution towards my achievement is recognizable and I am always happy for all of them. My mother, Mrs. Gertrude Nyauchi, is not comparable to any mother on -earth! And to brothers, Felix Nyauchi and Hezron Nyauchi, and sister, Sophie Nyauchi, I pray that their patience, moral and financial support pays back bountifully.

Finally, without God the Creator, this would a futile agenda. I am grateful for the Lord has guided me to a successful completion of this course.

ABSTRACT

Despite the numerous programmatic efforts made by the government in partnership with the private sector, levels of unmet need for family planning still remain high among women in Kenya's rural areas. This study utilizes data from the 2008-09 KDHS to examine factors that determine levels of unmet need for contraception among women in rural areas of Kenya. Leaving out currently pregnant and amenorrheic women, the study uses data of all other rural women in their reproductive ages as the unit of analysis.

Frequency distributions, cross tabulations and logistic regression have been used as tools of analysis. Frequency distributions provided a summary of rural women according to selected characteristics, cross tabulations provided the differentials of various components of unmet need for family planning by selected characteristic, while multivariate regression models provided predictor variables which were significantly associated with the various components of unmet need for contraception.

Regression analyses reveal that several variables are significantly related to unmet need for spacing, unmet need for limiting childbearing and total unmet need. Among the variables are women in rural areas' marital status, age, secondary or higher level of education, number of living children, employment status, region of residence, household wealth index and exposure to mass media communications.

In order to reduce unmet need for family planning in rural areas of Kenya, region-specific programmatic action should be adopted, active female involvement in education should be a priority to the government, and women should be enabled to acquire economic empowerment, agencies involved in family planning provision and communication should offer suitable sendees that target specific age groups, and a lot of these services should be offered to married women. Moreover, greater focus should be on provision of family planning services in order for women to space their

child births. Furthermore, future studies should examine the factors that determine unmet need among adolescent women in Kenya. Studies should also be done to understand the determinants of unmet need for family planning among counterpart women in Kenya's urban areas.

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ABBREVIATIONS AND ACRONYMS

CBS	Central Bureau of Statistics
DHS	Demographic and Health Survey
FP	Family Planning
GoK	Government of Kenya
ICPD	International Conference on Population and Development
KAP	Knowledge, Attitudes and Practice
KDHS	Kenya Demographic and Health Survey
KNBS	Kenya National Bureau of Statistics
MDG	Millennium Development Goal
MOH	Ministry of Health
NCAPD	National Coordinating Agency for Population and Development
NCPD	National Council for Population and Development
NGO	Non-Governmental Organization
NPPSD	National Population Policy for Sustainable Development
PoA	Programme of Action
SAP	Structural Adjustment Programme
SPSS	Statistical Packages for Social Sciences
SSA	Sub-Saharan Africa
TFR	Total Fertility Rate
UDHS	Uganda Demographic and Health Survey
UNFPA	United Nations Population Fund
UNPD	United Nations Population Division

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

A consideration of a Neo-Malthusian population policy in developing countries to advocate for the adoption of national family planning programs to address the issue of increasing population growth rates was a feature that started way back in 1950s upon realization that such a population policy would influence reduction of fertility among women in these countries (Chimbweteaa, et al, not dated). During this time, a population policy would be viewed as a very effective indicator of a government's commitment to population control and a signal of positive reception of involvement of international funding agencies to offer financial support to family planning activities in various third world countries.

In this regard, as early as in 1967, Kenya had adopted her first family planning programme that was meant to solve the problem of a constantly and rapidly increasing population size that would be costly to the country's development (Radel, 1973; Watkins & Hodgson, 1998). Being among the first sub-Saharan African countries to adopt a comprehensive family planning programme, it was widely expected that the country would lead by example (Chimbweteaa, et al, not dated) and therefore would be way ahead today in her implementation strategies to become among the first African states to witness demographic transition process that would be necessitated by increased contraceptive knowledge and use. However, due to a number of reasons, active implementation of the programme started almost two decades after its adoption, thereby delaying entry into demographic transition. This meant that the programme posted little success during this period, with both the total fertility and the population growth rates soaring to all-time records of 7.9 and 3.8 percent respectively in the year 1979 (NCAPD, 2010).

Since 1984, family planning has become an important component of Kenya's national reproductive health strategy. There have been efforts to control fertility through contraceptive use that would subsequently lead to a decline in population growth rate. In the year 2000, the government of Kenya set specific targets to increase contraceptive prevalence from 33 percent in 1993, to 53 percent and 62 percent in 2005 and 2010 respectively. The government also targeted to reduce total fertility rate (TFR) from 5.0 in 1995 to 3.5 and then 2.5 by the year 2005 and 2010 respectively. With these wishes, there was need to reduce population growth rate from 3.0 percent in 1995 to 2.2 percent in 2005 and further to 2.0 percent by the year 2010 (NCPD, 2000).

Despite these expectations and very objective targets, meeting them has become impossible, and the situation of Kenya's family planning usage has not gone in way with the earlier predictions that associated adoption of the family planning programme with increased knowledge and use of family planning. As such the country still faces a number of challenges in her quest to see her population acquire and use contraception. Even though the proportion of women who currently use contraceptive services has constantly increased over the years, thus gradual declines fertility, the rates are still below par, and the absolute numbers of women in their reproductive ages with unmet need for family planning has remained high (Magadi, et al, 2001). At the end of the National Population Policy for Sustainable Development (NPPSD) 2000-2010 period, the country was still very far from achieving the targets.

Kenya's TFR currently stands at 4.6 births per woman, which is an indication of a slight reduction from the previously recorded TFR of 4.9 births per woman in the year 2003 (KNBS & ICF Macro, 2010; CBS et al, 2004). This situation is attributable to increased knowledge and use of family planning services among members of different backgrounds. While the country records an increase in contraceptive prevalence from 32% in 2003 to the current rate of 39% (KNBS & ICF Macro 2010; CBS et al, 2004), the change is dramatic and desirable for a country that is on her process of fertility transition. Less dramatic is the decline

in population growth rate, from 2.9 percent in 1999 to 2.8 percent in 2009 (CBS, et al, 1999; 2009) which is associated with large proportions of the youth, especially in their reproductive ages, causing a population momentum.

The country's demographic experience throughout the period of her independence depicts a country undergoing a slow transition in reproductive health agenda, viewed in a rising use of contraception and falling birth rates. However, the gap between desired fertility and actual fertility suggests the extent of mistimed and unintended pregnancies. There was therefore need to document this gap, in terms of actual and potential contraception, so that the assessment of determinants of unmet need for family planning that is based on urban-rural residence becomes important for the purposes of programming family planning in Kenya and for informing the population policy making process (Ross, 1994; Sinding, 1994).

1.2 Problem Statement

Rates of unmet need for family planning remain highest among developing countries where one in every four women in their reproductive age remain exposed to unintended pregnancies or are unable to postpone childbirth (Casterlme and Sinding, 2001; Sedgh, et al 2007). Being part of the developing world in question, Kenya also experiences high levels of unmet need for contraception. According to KNBS and ICF Macro (2010), the country still needs a lot of services in this area with 26% of currently married women in dire need of family planning. Moreover, there are variations in contraceptive use based on place of residence so that urban settings experience a higher prevalence than rural areas. These variations have seen a higher unmet need for contraception among married women in rural areas (27 percent) against their counterparts in urban areas (20 percent).

While the desired average number of children in Kenya is estimated to be about 4.0, which is way much lower than the total fertility of 4.6, actual desired family size is bigger among women in rural areas (at 4.0 children) against urban women whose desired average number of children is 3.1. The TFR in rural areas

remains higher at 5.2 against that of urban women which is at a low of 2.9. That contraception prevalence remains at 46 percent, it is arguable that women's inability to access contraceptive services is a contributory factor to this situation. Because of lower contraceptive prevalence (of 43 percent) in rural Kenya than in urban areas (KNBS & ICF Macro, 2010), there is need to present women in rural areas with adequate family planning services. The implication here is that TFR in rural areas is about 30% higher than it would be if unintended pregnancies were prevented.

Several researchers have in the past attempted to establish the determinants of unmet need for family planning in Kenya. For example, Wangila (2001) found that unmet need for contraception appeared to be higher among rural women, among those not exposed to mass media, those whose partners disapproved family planning, among those with who have a higher number of living children and among those who are younger. He then recommended that future studies on unmet need should focus on both married and unmarried women and exclude pregnant and amenorrheic women (Wangila, 2001). In her findings, Oluteyo (2005) argued that unmet need for contraception concentrated among middle aged women, rural women, women residing in Rift Valley, women with primary level of education, protestant women, women who listen to radio less frequently, those with fewer children, whose partners approve family planning,

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women who have discussed contraception with their partners, and among those who approve family planning. Lately, Ojaka (2008) found that total unmet need is higher among women with a higher number of living children and those who have primary-level education. While working women with unmet need are more likely to report method-related reasons for non use of family planning methods, they are less likely to report opposition to family planning than their counterparts who do not work. Yet in another study, Omwago and Khasakhala (2006) concluded that the standard definition of unmet need overestimates the level of unmet need and that wife's level of education, methods known, and discussion on FP were significant. They recommended that researchers on determinants of unmet need for contraception should focus on couples' discussion on family planning.

Such studies on unmet need have mainly focused on currently married women or those in unions, therefore, left out single, divorced, separated and widowed women. However, it should be noted that some of these women are sexually active, and they too could experience unmet need for family planning but are often excluded from measurements that focus on unmet need. Their exclusion in such measurements means an underestimation of levels of unmet need for family planning (Ross and Winfrey, 2002). As a result, the extent of unmet need for women with these characteristics is barely known, therefore, the interest to include such women in measurement using a suitable data. Besides, factors underlying high levels of unmet need for family planning among women in rural areas are not well understood. Moreover, none of the studies have considered women's migration status as a factor that is likely to affect unmet need for contraception. Thus, this study was very appropriate in filling knowledge gap surrounding the factors underlying unmet need for contraception in Kenya's rural areas. On this basis, this study sought to uncover factors that contribute to high rates of unmet need of family planning among women in Kenya's rural areas with a focus on the importance of these factors in determining child spacing decisions as well as choices for birth limitation.

13 Purpose of the Study

The purpose of this study was to identify factors that contribute to unmet need for family planning among women in Kenyan rural areas.

14 Research Questions

This study has attempted to address and respond to the following research questions

- i. How does unmet need for family planning in rural areas compare among members of different social, economic, cultural and demographic characteristics?

- ii. What factors are associated to unmet need for family planning in rural areas in Kenya?

1.5 Study Objectives

Specifically, this study wanted to

- i. Estimate differentials in unmet need of family planning by characteristics of women in rural areas

such as their social, economic, cultural and demographic characteristics

- ii. Identify factors associated with unmet need for family planning among women in rural Kenya

1.6 Justification of the Study

Uptake of family planning services in Kenya has in the past increased slowly, accompanied with a slight stagnation during the past one decade. Again, the uptake of these services has been low among women in rural areas, thereby creating a huge need for spacing and limiting childbirths in rural areas. With recent attempts by researchers in family planning issues seeking to establish the determinants of unmet need for contraception in Kenya, there has been an indication that women in rural areas, especially those not exposed to mass media messages and whose partners do not approve of use of family planning, experience higher need for family planning services (Wangila, 2001).

Ojaka (2008) agrees with this fact that Kenya has witnessed an increased utilisation of family planning services since 1993. In his view, there has been a slight increase in use of contraception, with some decline in unmet need for contraception. However, unmet need for family planning remained constant between 1998 and 2003. As Westoff (2006) puts it, the sum of currently married women using contraception and the percentage with an unmet need equals the total demand for family planning. The situation among women in rural areas is not an exception, as they contribute immensely to the stalling rates of unmet need for contraceptives.

Together with a number of other studies, the above mentioned studies have generally focused mainly on currently married women only. As such, single women, those divorced, separated or widowed have not been considered in such studies despite the fact that very many of these women are as well sexually active, and have unmet need for contraception. Barely well documented is the extent of unmet need for family planning among women who belong to these categories. The exclusion of these groups of women cannot be useful to researchers who seek to get accurate estimations of extent of unmet need for family planning. Thus, there is need to include these groups of women in current studies of unmet need for family planning in Kenya.

Also, unmet need for family planning is a very big problem among women in rural Kenya, whose solution has not been adequately identified. A little research work has been undertaken to establish the possible factors that have led to high levels of unmet need for family planning among Kenyan women in rural areas. Not a substantial amount of research has been undertaken on this topic using the most current data, and for all the studies that have been done, there has been restricted inclusion of variables that determine the high unmet need among women in rural areas. This study also included migratory characteristics of women in rural Kenya in order to establish its impact on need for use of contraception, among other variables.

As such, the findings of this study would be used to inform policy makers and organisations implementing family planning and reproductive health programmes in Kenya for planning programme strategies, projecting budgets and resources, as well as assessing programme outcomes (Dixon-Mueller and Germain, 1992). Unmet need for family planning also has a relationship with maternal health and child health, so that, if unintended or mistimed pregnancies are reduced by ensuring increased knowledge and use of family planning services, the current high maternal mortality ratio and child and infant mortality rates in rural areas will as well reduce. Improved knowledge and use of contraception in rural Kenya will also effectively reduce the high fertility in rural areas, and this will relieve the country from the pressure that rapid

population growth places on economic, social and natural resources. Again, it will relieve the country of the burden of increasing rural to urban migration rates that have led to further development of informal settlements in urban areas, youth unemployment, scarcity of housing, insecurity, and heavy traffic congestion, among other problems witnessed in urban settings.

1.7 Limitations of the Study

This study focused on the social, economic, cultural and demographic determinants of unmet need for family planning among women in rural areas in Kenya. Therefore, only a few background variables were selected.

Another limitation was that the study used a secondary source of data, and given the limitations of secondary data analysis, often, there is an inevitable gap between primary data personally collected with specific research purposes and intentions (Nachmias & Nachmias, 1996). This data was collected in 2008-2009 Kenya Demographic and Health Survey (KDHS) from 8,444 sexually active women aged between 15-49 who were either usual residents of the sampled households or had visited the households the night before the survey. Infecund women in the sample were excluded from analysis.

Another limitation of this study was scarcity of literature on unmet need for family planning among rural women. Moreover, previous studies have heavily focused on unmet need for contraception among married women only.

Lastly, this study utilized descriptive and inferential statistics for data analysis. However, for inferential statistics, simple and multivariate logistic regression analysis was preferred because independent variables are dichotomous.

1.8 Assumption of the Study

The study assumed that all fecund women who are sexually active would need contraception in order to either limit child bearing or space births.

1.9 Definition of Terms used in the Study

The significant terms and phrases that have been used in this study include the following:

Unmet need — The percentage of married women or those in active sexual unions who want to space their next birth or stop childbearing entirely but are not using any contraception.

Rural residence — As opposed to urban residence, rural residence refers to areas whose populations heavily rely on primary economic activities such as agriculture and livestock rearing, mining, and fishing.

Family planning— A programme designed to regulate the number and spacing of children in a family through the practice of contraception or other methods of birth control.

Contraception — The intentional prevention of conception through the use of various devices, sexual practices, chemicals, drugs, or surgical procedures. This means that something (or some behaviour) becomes a contraceptive if its purpose is to prevent a woman from becoming pregnant.

Fecundity - The biological ability of a woman to conceive and bear children

Reproductive Health — Implies that people are able to have a responsible, satisfying and safer sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section explores theoretical literature as well as empirical literature. It starts by reviewing some existing literature with aim to contextualize the concept of 'unmet need' then seek to understand the determinants of unmet need for family planning. Based on these, a number of studies that have been conducted on this topic were explored, with a focus on family planning experience in rural Kenya. Based on a theoretical framework, this study describes its sub-components of conceptual and operational frameworks, operational model and study variables whose relationships are to be established.

2.1 Theoretical Literature

2.1.1 The concept of unmet need

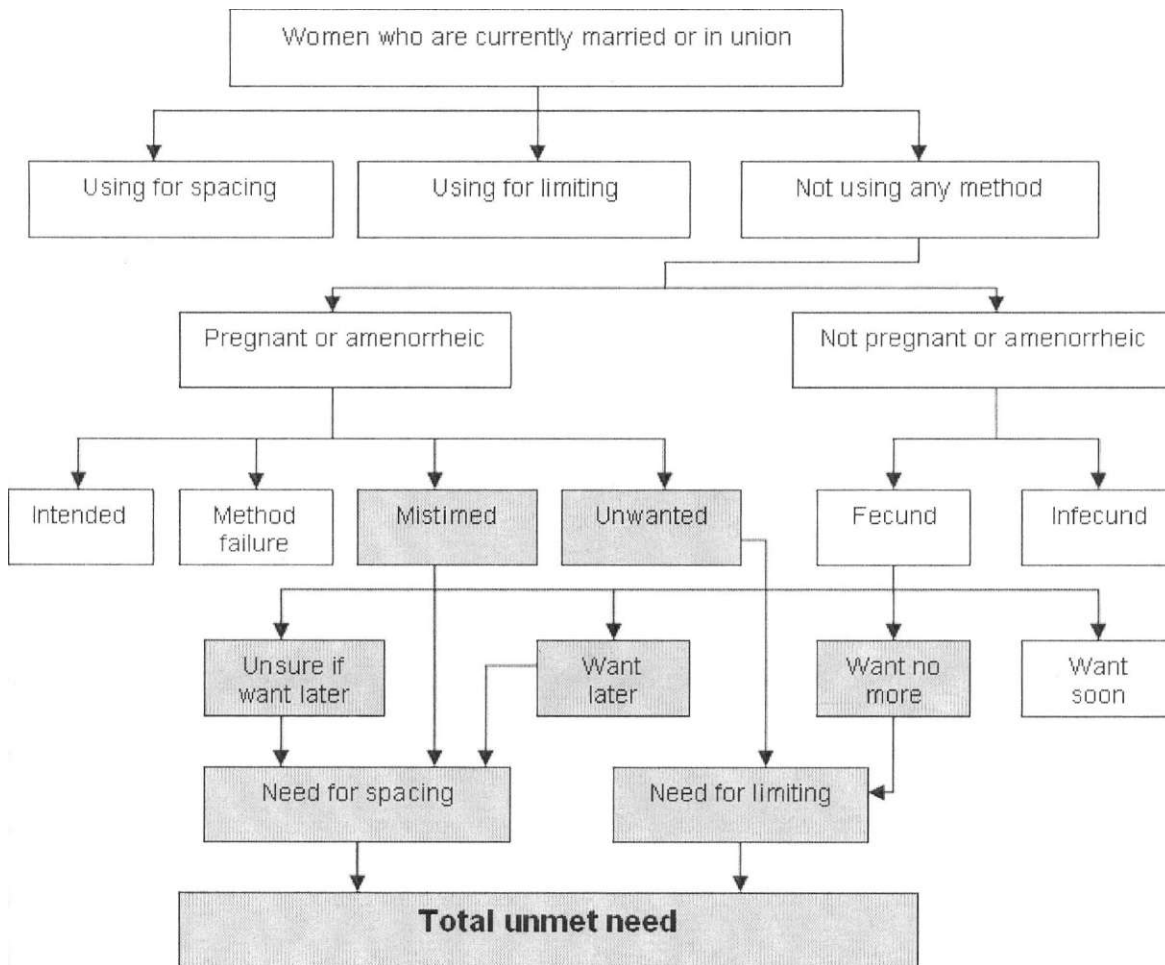
In an attempt to place the concept to its appropriate period of origin, Westoff (1994) has it that unmet need for family planning originated in the studies of knowledge, attitude and practice (KAP) that were conducted in 1950s and 1960s, whose aim was to characterise married women, especially in developing countries, who did not want an extra child, and yet were not practicing any method of contraception at that time for a reason or another. Such reasons, he says, included unavailability of the contraceptives, ignorance on part of the women, conflict between modern values and cultural beliefs, opposition from their husbands, and that a number of women were inadequately motivated to utilize contraception. The measure for unmet need in these studies was the KAP-gap, which referred to the discrepancy between a woman's expressed fertility preference and her actual contraceptive behavior (Bongaarts and Bruce, 1995).

According to the UNPD (2009), unmet need for family planning refers to the percentage of women in their reproductive age who are married or are in union and are in need of family planning services. Such women are fecund and sexually active yet they are not using any method of contraception and report not wanting any more children or wanting to delay birth of next child. Women who are pregnant would be considered to have unmet need for family planning for spacing or limiting childbirth if their pregnancy was a mistimed or unintended one. Unmet need for family planning may be looked at in two perspectives: unmet need for child spacing; and unmet need for limiting births.

Earlier on, Westoff (1988) had defined unmet need for family planning as the percentage of women of reproductive age who are not using any method of family planning, but who would like to postpone the next pregnancy (unmet need for child spacing), or do not want any more children (unmet need for birth limiting). In this sense, an important component of unmet need is fertility preferences which reflect the motivation of women to avoid pregnancy (Ojaka, 2008). According to Bongaarts (1990), there are several ways through which fertility preferences could be measured using survey data. These include asking questions about ideal or desired family size, or whether the current birth was intended or unintended, and whether the woman intends to continue with childbearing. However, Pritchett (1994) is convinced that of all these questions, the one on desire for additional births are considered the least biased, therefore the most suitable in determining fertility preferences.

Working on this basis, Westoff and Ochoa (1991) developed a procedure for determining unmet need among a women population. In their procedure, they worked with married women or those in unions. Contraception can be used by these women for either spacing or limiting births. However, for those not using any contraception, chances are that they may be pregnant or amenorrheic or not.

Fig 2.1: Diagram that aids the computation of unmet need



Source: Westoff and Ochoa (1991)

This process of estimation was developed further to follow six steps as shown in the following algorithm (Robey, et al. 1996; Westoff, 2006):

Step one. Contraceptive use status: The researcher needs to consider the universe of all married women of reproductive age and from this, determine the proportion not using contraception

Step two. Pregnancy and amenorrheic status: From the group not using contraception, the researcher determines the proportion pregnant or amenorrheic, as well as the proportion neither pregnant nor amenorrheic

Step three: For both groups selected, the researcher considers whether the pregnancies were wanted or not, and determines fecundity status. He therefore calculates the proportion for the three groups he has developed; that is, pregnancy mistimed, pregnancy unwanted, fecund

Step four: For the fecund group that the researcher identifies, he should consider future fertility intentions. The researcher should therefore calculate the proportion who want to postpone childbearing and those who want no more children

Step five: The researcher should reconsider the groups in step 3 and step 4 above. From the groups, he can calculate the proportion who have unmet need for spacing and limiting, respectively.

Step six: The researcher sums the four groups as in step 5 above to determine the total unmet need.

Being exclusively confined to married women who wanted no more births and were not using any contraceptive methods, early measures of unmet need for contraception assumed that these women were more exposed to the risk of conception. Unlike those studies, the current measures include married women who are not using any method of contraception, and do not want any more child or who wish to postpone the next birth for at least two more years even though they are biologically able to bear children. This includes women in their period of postpartum amenorrhea or pregnant women in that condition because they did not want a child then and were not using contraceptives.

There are several criticisms that have been advanced against the previously used measure of unmet need for family planning. First, these earlier measures focused on married women only and these measures therefore posed a limitation because they never included the never married women who are sexually active and are as well at risk of intended pregnancy like their married counterparts. Also, the fact that these measures did not take abortion into consideration was a major setback because abortion remains a very common fertility regulation method that many populations prefer. Thus, Westoff and Bankole (1995)

believe that those measures have failed to consider abortion as a way of fertility control mainly those because those individuals lack information on the extent of its use, and because for a long time, in several surveys, abortion has been grossly underreported.

With time, several modifications were introduced to the measurements of unmet need. The refinements introduced to this measure included specifically looking at women who are exposed to the risk of pregnancy, and relating it to their current pregnancy status, fecundity and their proneness to postpartum amenorrhea. However, Westoff and Pebley (1981) feel that this is not the best measure for unmet need for contraception because the concept may mean different things to different researchers who would want to investigate different perspectives related to this topic.

In their own view, Dixon-Mueller and Germain (1992) feel that it is the responsibility of the researcher to define a woman's need to use contraception, and not the woman herself. Therefore, the researcher is expected to make appropriate deductions based on the inconsistencies between the woman's contraceptive behaviour and her reproductive preferences. As a result, it has not been an easy task to capture adequately the elusive unmet need, and that it tends to hide from researchers and continuously changes its shape and size depending on how the researcher frames his questions in the questionnaire, the criteria used and assumptions made. Based on this argument, and relevant to this study, it is expected that the unmet need for contraception among women in rural areas should not be defined by a rural woman herself, but to be deduced from the inconsistency between contraceptive behaviour and reproductive preferences.

Klijzing, (2000) introduces some information on in his definition of unmet need for family planning as a gap between women's stated fertility preferences and their contraceptive use at a given point of time. In his sight, the concept can serve as a basis for identifying specific sub-populations that are in dire need of programmatic action. Moreover, unmet need rises as more women would like to control their fertility but for some reasons are unable to do so, and it falls as more women start to practice contraception. In his

explanation, Klijzing (2000) says that when a country experiences high levels of unmet need, it does not necessarily mean that there is programme failure nor vice versa. He also seeks to explore the connection between transition from high fertility to low fertility and concomitant changes in levels of unmet need. Most parents usually do not want to limit or space births, or are unaware of the possibility that they can, hence, high fertility. This results to low contraceptive use and unmet need for contraception.

The 1994 International Conference on Population and Development (ICPD) in Cairo, Egypt recommended Programme of Action (PoA) which recognised unmet need as substantial among growing numbers of sexually active unmarried individuals. Thus, in order to estimate unmet need among never married women, Westoff and Bankole (1995), after examining data from Demographic and Health Surveys (DHS) undertaken in sub-Saharan African (SSA) countries, conclude that unmarried women cannot be presumed to be sexually active, and therefore there is need to consider fecund never married women to have unmet need only if they satisfy the three conditions: the first is that they report they were sexually active within the month before the survey; they do not desire pregnancy; but they are not currently using any contraception, or else are pregnant unintentionally or amenorrhoeic after an unintended pregnancy.

"v

2.2 Empirical Literature

As Klijzing (2000) asserts, however much limited evidence is available, some level of unmet need for contraception is likely to exist in every country, regardless of their development levels. Thus, developed or developing, ever}' country experiences some degree of unmet need even if the country has a wide use of family planning. Various studies have been conducted in both developing and developed countries to explain factors that influence uptake of family planning and factors associated with women's unmet need for family planning. However, little attention has been paid to research on unmet need among women in rural Kenya. Below is a discussion of some of the studies.

In their attempt to understand the influences on the desire for more children and current contraceptive practice, Withers, et al (2010) examined 1528 married women of reproductive age in a certain isolated community in Bali, Indonesia. The researchers employed multivariate analysis procedures to come out with findings that, younger women had fewer living children, had given birth in the past one year, had regular access to health services and were more likely to desire to add children. In this study, it was established that being older, having fewer living children, lack of regular access to health care services, having had a delivery in the last one year and having the desire for more children are associated with lower likelihood of contraceptive use. It was also established that women with regular access to health care are more likely to desire more children, a point pinned on the fact that these women are more confident in their ability to have successful birth outcomes. The study findings identify older women and postpartum women as key target groups for family planning, even though these women may not be able to see themselves to be at risk of unintended pregnancies. The researchers conclude that meeting unmet need for family planning for these groups could help them meet their fertility goals, as well as reduce maternal morbidity and mortality as advised in the Millennium Development Goals (MDGs) .

Using three sets of KDHS data of 1993, 1998, and 2003, Ojaka (2008) used both descriptive statistics and multivariate regression methods to examine the trends and determinants of unmet need for family planning methods in Kenya. The study was developed on the basis that contraceptive prevalence had leveled off at 25 percent in a period of the last decade. The findings of the study reveal that total unmet need decreases with a women's age, level of education, household wealth, exposure to family planning messages, and employment. Other significant findings of the study are that total unmet need is higher among women with larger number of living children and those who have primary level of education. Ojaka (2008) also reports that working women are more likely to report method-related reasons for not using family planning methods and are less likely to report opposition to family planning than women who do not work. His regression analysis reveal that several variables such as women's age, number of living children, level of

education, household wealth, current work status, exposure to media messages about family planning, discussion with the partner about family planning and contact with health services are significantly related to total unmet need.

Sedgh et al. (2008) also sought the reasons behind high levels of unmet need for contraception, being one indicator of the Millennium Development Goals (MDGs), especially in developing countries. The reasons that were established in this study include concerns about perceived side effects of contraception as well as the perception on part of some women that they are not at risk of getting pregnant. As a result, intention to use contraception is lower among women who mention the perceived side effects and health concerns.

A similar kind of study was conducted by Khan et al. (2008) with the aim to identify possible factors that affect unmet need for family planning using Uganda Demographic and Health Survey (UDHS) data of 2006. These researchers concluded that factors such as marital status, number of living children, rural residence, and residence in the northern part of Uganda influenced unmet need among women in Uganda. Further, even a slight reduction in unmet need is likely to result in increased contraceptive use rates and therefore, reduced fertility.

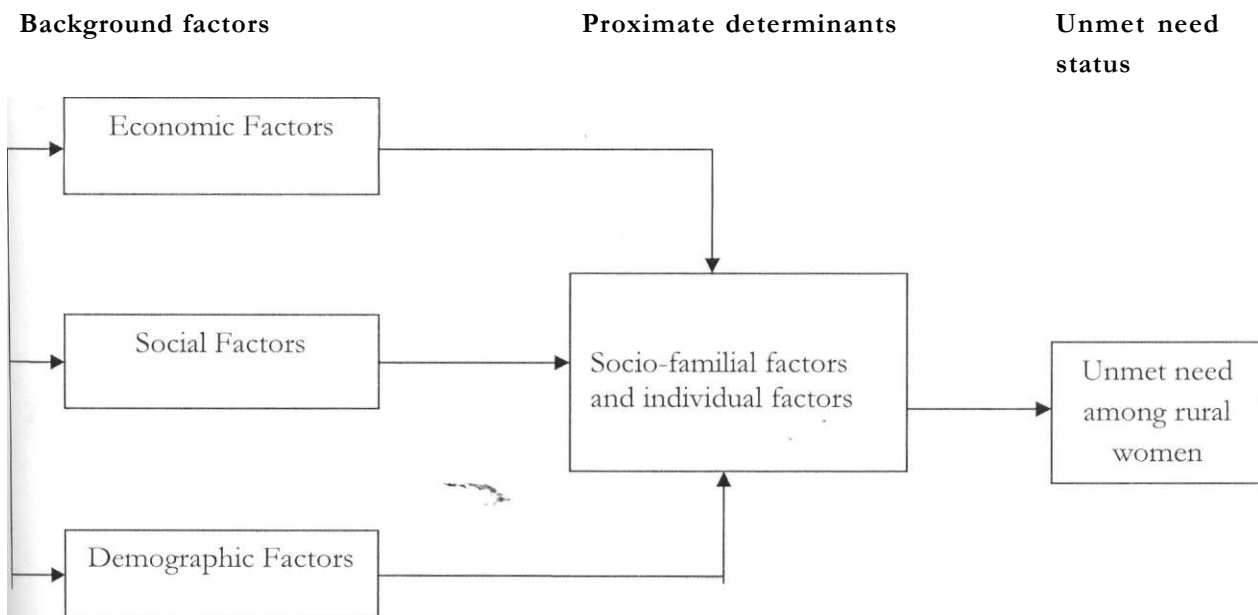
In his study on unmet need for family planning in Kenya, Karanja (1997) established that there was a positive association between contraceptive prevalence and lack of information on family planning. In his study, urban areas recorded lower rates of unmet need for family planning, compared to that of women in rural areas. Moreover, given that contraception is used either for child spacing or for limiting births, the study found out that higher unmet need exists in rural areas for child spacing and birth limiting (22.8 percent and 19.4 percent respectively). On the other hand, there were lower rates of unmet need for family in urban areas (17.7 percent and 15.4 percent) for spacing and child birth limiting, respectively. The study also established that older women tend to have unmet need for child spacing whereas, a woman with a

bigger family size would necessarily seek for family planning to limit child bearing, and that there is no favourable association between unmet need for family planning and level of education (Karanja, 1997).

2.3 Conceptual Framework

This study was guided by Casterline et al. (1997) theoretical framework. This framework explores socio-economic, socio-familial and demographic factors and how they function in isolation or jointly to cause unmet need for family planning.

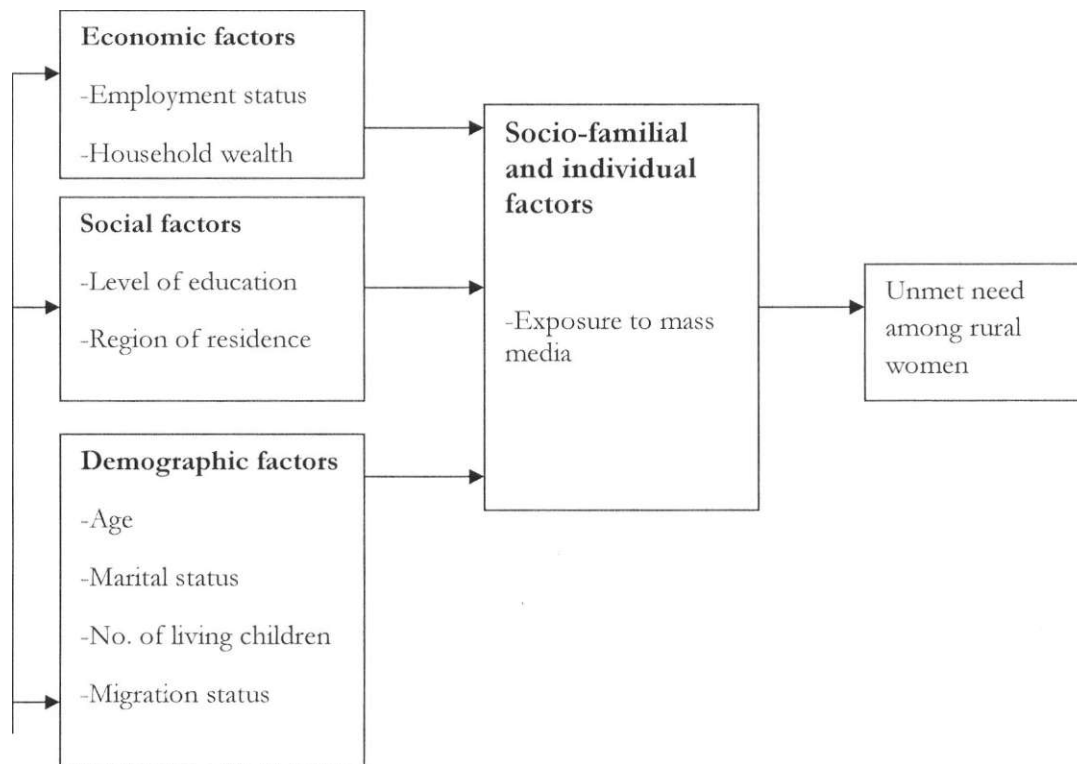
Fig 2.2: The Conceptual Framework for the Study



Source: Casterline et, al. (1997) (modified)

Whereas in their study, Casterline, Perez and Biddlecom (1997) looked at factors associated with both demand for family planning and supply of the same, this study focused on possible factors that determine demand for contraception since a focus on both may be quite involving in terms of methodology.

2.4 Operational Framework



2.5 Operational Hypotheses

- i. Women's employment in formal sector is negatively associated with the levels of unmet need for contraception
- ii. The level of household wealth is negatively associated with the rate of unmet need for family planning
- iii. A woman's level of education is negatively associated with the level of unmet need for family planning
- iv. Region of residence affects unmet need for contraception
- v. A woman's age is positively associated with unmet need for family planning. However, it is worth mentioning that age is negatively associated with unmet need for contraception to space but is positively associated with unmet need for limiting childbearing

- vi. Marital status of a woman is positively associated with level of unmet need for contraception
- vii. The total number of living children a woman has is positively associated with unmet need for family planning
- viii. Migration of women affects levels of unmet need for contraception
- ix. Exposure to mass media communication is associated with lower levels of unmet need for contraception among women

CHAPTER THREE

DATA AND METHODS

3.0 Introduction

This section provides details on the source of data that has been used and the methodology applied to analyze the data.

3.1 Data Source

This study utilized data from Kenya Health and Demographic Survey (KDIIS) 2008-09 which involved a nationally representative sample of 8,444 women in their reproductive ages. From this a sample of 5,829 women from rural areas was be used.

3.2 Data Analysis

The study focuses on women from rural areas therefore data based on these women has been selected for analysis. However, currently pregnant and amenorrhea women were excluded from the analysis. Their exclusion was based on the fact that they are not currently exposed to the risk of becoming pregnant regardless of them having previously planned or not planned their current pregnancies (Westofi and Pebley, 1981). Moreover, inclusion of these women in this study would overestimate the level of unmet need in Kenya's rural areas (Bongaarts, 1991).

According to Nortman (1982), inclusion of pregnant women in such a study would be problematic because pregnant women are less likely to accept that their pregnancies are unintended or mistimed. Westoff and

Bankole (2000) have also suggested that pregnant and amenorrhea women should be excluded from the measurement of unmet need, thus on this basis, these two groups will be excluded in this study. However, it is noteworthy that several studies have found that women can conceive during amenorrhea since ovulation can occur prior to the period when the menses resume, and thus, postpartum amenorrhea does not necessarily guarantee women a perfect protection from getting pregnant (Nortman, 1982).

Data analysis was done using SPSS version 17. Analysis was done in two levels: descriptive statistics and logistic regression analysis. Descriptive statistics was used to examine differentials across regions, social, cultural, economic and demographic backgrounds. Binary logistic regression of total unmet need on the same covariates was as well performed.

3.3 Descriptive Statistics

Frequency distributions are usually used to measure how often an occurrence of a variable and its values occur in a data set. In this study, frequencies will be used to give summary of distribution of women in rural areas by selected independent and dependent characteristics. This information is important because it helps the researcher to understand the skewness of the selected variables, considering that it is acceptably difficult to obtain a normal distribution in social sciences (Mugenda and Mugenda, 1999).

Cross tabulations was run in attempt to measure the relationship between unmet need for family planning by selected characteristics of women in rural areas.

Chi-square statistic was also applied in this study. Chi square is a statistical technique which attempts to establish the relationship between two variables, both of which are categorical in nature (Mugenda and Mugenda, 1999). Chi square statistic was used to determine the magnitude of the relationship between the dependent variables (unmet need for contraception, unmet need for limiting and spacing childbearing) and selected independent variables and to show the strength of the observed relationship. The computation of chi-square statistic follows the formula:

$$\chi^2 = \sum (O - E)^2 / E$$

Where, E = Expected frequency for each cell

O = Observed frequency for each cell

S = Sum (Sigma)

3.4 Regression Analysis

Because bivariate associations do not show the effect of other confounding factors included on the dependent variable, and that the dependent variable is dichotomous, linear models may pose problems.

This study used women in rural areas who had unmet need for family planning as dependent variable taking the value 1 while those who did not have unmet need for family planning will take 0. Since the dependent variable is dichotomous, logistic regression model was utilised to estimate the dependent variable. Even though it is possible to employ both logit and probit models in such case, the former is lesser involving than the latter (Gujarati, 1995), hence the suitability of logit model.

The logistic function upon which logit model is based may be expressed as:

$$f(x) = \frac{e^{bx}}{1 + e^{bx}} \dots \dots \dots \text{Equation 1}$$

Where, f(x) = logistic function;

x = the variable of interest (predictor variable)

b = the 'scaling' parameter

e = the base of the natural logarithm

Thus, the log of the odds {the ratio of occurrence of an event f_x to the event that it will not occur $(1-f_x)$ } is equal to bx

$$\ln \left(\frac{f_x}{1 - f_x} \right) = bx \dots \dots \dots \text{Equation 2}$$

Equation 2 above is usually applicable in case of bivariate logistic regression where the dichotomous variable $f(x)$ is expressed as a non-linear function of the explanatory variable x (Wangila, 2001).

3.5 Multivariate Regression Analysis

Unlike the bivariate logistic regression analysis, multivariate logistic regression entails the inclusion of all independent variables to test their effect on the dependent variable. This helps to reduce the stochastic error — the effect of many omitted variables on the dependent variables - that might be experienced in simple logistic regression.

This study therefore employed multivariate logistic regression, presented in the form of log of odds to a set of variables. This is usually expressed as

$$\ln \left(\frac{P_x}{q_x} \right) = p_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_n x_n + e \dots \dots \dots \text{Equation 3}$$

Where P_x = Probability that an event will occur (probability that a woman will have unmet need)

q_x = Probability that event will not occur

\ln = natural log (approximately equals to 2.71828)

p_0, \dots, p_n = logistic regression coefficients

x_1, \dots, x_n = independent variables, expressed in series

e = the error term

At the multivariate level of analysis, three models were run to determine unmet need to space, unmet need to limit and the total unmet need for family planning. Nine independent variables were run against the three aspects of unmet need, and were grouped according to their broad categories:

Economic Factors', employment status and household wealth;

Social Factors', level of education and region of residence;

Demographic Factors: age, marital status, number of living children and migration status; and

Socio-familial and Individual Factors exposure to mass communication.

The choice for these ten independent variables was founded on the findings of the previous chapter that these variables were significantly associated with unmet need for family planning in rural area. For the multivariate logistic regression analysis, three models have been derived based on the nature of unmet need: *Model I* - unmet need for limiting child bearing; *Model II* - unmet need for spacing of child births; and *Model III* - overall unmet need for family planning.

3.6 Definition of Variables

Dependent Variable

Variable Name	Measurement
Unmet Need	0 = Without unmet need 1 = With unmet need

Independent Variables

Marital Status	1 = Never married 2 = Ever married
Age	1 = 15-24 2 = 25-34 3 = 35+
Level of education	1 = No education 2 = Primary 3 = Secondary+
Number of living children	1 = 0 2 = 1-2 3 = 3-4 4 = 5+
Employment status	1 = Currently employed 2 = Not employed
Region of residence	1 = Central 2 = Coast 3 = Eastern 4 = Nyanza 5 = Rift Valley 6 = Western 7 = North Eastern

Household wealth

- 1 — Low
- 2 = Average
- 3 = High

Migration status

- 1 — Migrated from urban
- 2 = Not migrated from urban

Exposure to mass media communication

- 1 = Not listened at all
- 2 = Ever listened

CHAPTER FOUR

DIFFERENTIALS OF UNMET NEED FOR FAMILY PLANNING

4.0 Introduction

In this chapter, the distribution of respondents according to selected characteristics is presented. Also presented are the results for bivariate analysis of the KDHS 2008-09 women participants who were interviewed in rural Kenya by their characteristics, composition and level of unmet need for family planning. Unmet need for family planning has been sub-divided into unmet need for limiting and unmet need for spacing child births, and whose summation gives total unmet need for family planning.

4.1 Basic Characteristics of the Study Population

Out of the 8444 women who participated in the 2008-09 KDHS, 2615 lived in urban while 5829 (69 percent) of them lived in rural areas. Since the study focused on neither women who were pregnant nor ammenhoric at the time they were interviewed, women with these characteristics were excluded from this study, thus leaving a study population of 4476 women as shown in Table 4.1.

i In terms of their marital status, most of the respondents (65.9 percent) had ever experienced marriage in their lives, out of which some had divorced, separated or widowed. However, majority (76.7 percent) of these ever married women are currently in marital relationship while only 6.5 percent of them are just living I together. The remaining proportion comprises women who are divorced, widowed or separated.

In relation to age, majority (42.0 percent) of the study population were members of 15-24 years age group. I This is a true picture of Kenya being a developing country whose population is still youthful and therefore majority would fall within this category. Considering that this is the rural population, it is expected that age

at marriage remain low unlike what would have been observed suppose it were urban. Still, in this study, 24-34 years age group had the smallest representation of 24.6 percent.

Most of the study participants (85.1 percent) had acquired formal education up to at least primary level, with slightly more than two thirds (68.2 percent) of those who have acquired education having attained primary level of education.

With a majority (32.2 percent) of women reporting that they do not have any currently living children, only 985 women reported that they have five or more children. The high proportion of women who do not currently have any living children could be attributed to the fact that quite a number of study participants are not currently in marital relationships because they are attending to education at either primary, secondary or post-secondary levels (Robey, et al, 1996).

A true picture of poor economic situation in a developing country can be depicted by the fact that only 6.9 percent of the women in this study lives in a household with high wealth index. Moreover, a good number (46.6 percent) of these women are currently not involved in any gainful employment. This is a true reflection of a rural set up in many developing countries where employment opportunities for women, especially, are hard to come by. In a way, their failure to engage in employment opportunities could be a reason why most households languish in poverty as seen in the household wealth index.

Migration from large cities and capital, towns or from abroad has as well been experienced as most of the respondents (57.0 percent) had moved from such places back to rural areas. Major reasons for such a trend could be the 2007 post-election violence, retirement from gainful job opportunities on part of household breadwinners, the widely encouraged decentralization process that is accompanied by government's messages and creation of economic opportunities in rural areas, among other reasons.

There is a good exposure to mass media communications among women in rural areas as 80.4 percent of them have ever listened to radio communications. Most of the respondents (55.2 percent) listen to the radio almost every day with 16.2 percent of them listening to radio communications at least once a week. This is a good indicator as a lot of family planning messages are currently relayed on media channels so that users can be reached. Moreover, radio communications also give women the exposure to learn more about the environment they live in and how to live better.

Most of study participants were drawn from Eastern Province which produced 18.6 percent of the total women who were interviewed. North Eastern, on the other hand, had the fewest —only 6.6 percent of the participants interviewed.

Table 4.1: Distribution of Respondents according to Selected Characteristics

Variable		Number of cases (N=4476)	Percent
Current marital status	Never married	1526	34.1
	Ever Married	2950	65.9
Age	*V 15-24	1880	42
	25-34	1099	24.6
	35+	1497	33.4
Highest educational level	No education	668	14.9
	Primary	2598	58
	Secondary 4-	1210	27.1
Number of living children	0	1441	32.2
	1-2 children	1037	23.2
	3-4 children	1013	22.6
	5+ children	985	22
Respondent currently working	No	2086	46.6
	Yes	2369	52.9
	Missing	21	0.5

Region	Central	721	16.1
	Coast	422	9.4
	Eastern	833	18.6
	Nyanza	758	16.9
	Rift Valley	802	17.9
	Western	644	14.4
	North Eastern	296	6.6
Household wealth	Low	1102	24.6
	Average	3063	68.5
	High	311	6.9
Migration status	Migrated from urban	2552	57
	Not migrated from urban	1924	43
Exposure to mass media communication	Not listened at all	872	19.5
	Ever listened	3601	80.4
	Missing	3	0.1

Source: Primary Analysis of 2008-09 KDHS

4.2 Differentials of Unmet Need for Family Planning in Rural Kenya

Given that frequency distribution tables do not show differentials and levels by selected characteristics, cross-tabulations and chi-square tests were computed for this specific function for unmet need for family planning among women in Kenya's rural areas. These computations were done based on the various selected characteristics of these women as shown in Table 4.2.

The study reveals that ever married women tend to have greater levels of total unmet need than those who have never been married. Moreover, it is evident that unmet need for spacing child births is experienced majorly by women who have ever been married at one point in time, and the same is true with unmet need for family planning to limit child bearing. A very small proportion of women who have never been married reported unmet need for family planning to space child births (9.06 percent) and to limit child bearing (1.41 percent). Thus, it is worth appreciating that unmet need for family planning is widely an issue that affects

every married woman (Westoff and Ochoa, 1991; UNDP, 2009) more than it affects those who have never been married.

Overall levels of unmet need for family planning among women in rural areas increase as age increases, such that most (41.35 percent) of rural women with total unmet need are those aged 35 years and above. Similar trends are exhibited in terms of unmet need for limiting child births among women from rural areas. However, in terms of unmet need for spacing, age is inversely associated with unmet need for family planning, so that most of the rural women (47.32 percent) with unmet need for spacing are aged between 15 and 24 years. The argument that can be raised based on this finding is that younger women are yet to achieve their fertility goals, hence greater levels of unmet need for spacing, while older women perceive themselves to be at lower risk to conceive, thus become reluctant to use contraceptives to limit child bearing (Wangila, 2001; Casterline, et al, 1997).

Inconsistent relationship between women's highest level of education and level of unmet need is exhibited among women in rural area. Total unmet need for family planning is greatest among women who have attained primary education, and the same is seen with unmet need for spacing as well as for limiting child births. While this is the case, those who have secondary school and above qualifications exhibit the lowest levels of unmet need for spacing, limiting and overall unmet need for contraception. In their view, Robey et al, (1996) are convinced that women with more education are more likely to use contraception to avoid pregnancy than their counterparts with lesser education, but all women equally face the obstacles associated with contraception use. Because of these obstacles, little linear association can be derived from this relationship (Wangila, 2001; Ojaka, 2008).

Women who have attained secondary or above education have the least levels of unmet need (only 13.48 percent of the total women) because at this level of education, women would want to have fewer children, and therefore would be driven into using contraceptives. Moreover, women from this category are more

likely to be involved in gainful formal employment, which may be time demanding and thus the women would opt for fewer families (Wangila, 2001; Becker, 1991).

Unmet need for family planning among women in rural areas of Kenya is positively associated with the number of surviving children these women have. Levels of unmet need to limit child bearing is as well positively associated with number of living children a woman has. That as the number of living children increases the need for contraception to limit child bearing increases is a strong reason behind this kind of association. However, the association between unmet need for spacing child births is negatively associated with number of living children a woman has, while those with no children tend to exhibit the lowest level of unmet need for spacing because some of them are yet to experience their first conception and so they do not have a reason to seek for contraception to space births.

Women who are involved in gainful employment opportunities in rural areas experience lower levels of unmet need for spacing child births as compared their counterparts who are who are currently not working. This goes in line with the generalization that such women do not have adequate time to continue conceiving without planning since formal employment also demand for their time, and as a result, they tend to seek for contraceptives (Becker, 1991). However, these women who go to work have greater unmet need to limit child bearing than their counterparts who are not employed.

Differentials in terms of region of residence also reveal that total unmet need among rural women is highest in Rift Valley and Nyanza provinces and least in Central and North Eastern provinces. Unmet need for spacing of births is least in Central Province and greatest in Nyanza Province, a true reflection of contraception utilization in these provinces. While that remains the case with unmet need for spacing, Rift Valley Province exhibits the greatest level of unmet need for limiting births while it is evident that this is least among women in North Eastern Province, a point that can be attributed to the fact that women in

North Eastern Province probably do not have the message that there is a way they can limit childbearing, so that even with high fertility in the area, they feel alright without contraception.

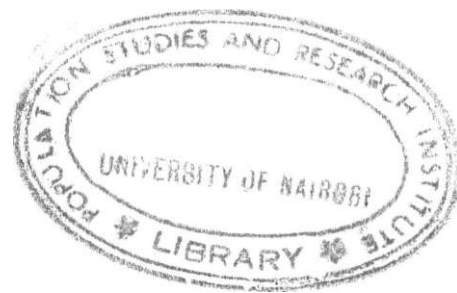
Generally, women from households with the highest wealth quartiles tend to have the least unmet need for family planning. It is also worth arguing that levels of unmet need for family planning are inversely associated with wealth indices.

Table 4.2: Percentage distribution of women in rural Kenya by unmet need for family planning status and selected characteristics, KDHS 2008-09

Variable		Unmet Need to Space 1%)	Unmet Need to Limit (%)	Total Unmet Need (%)	Cases (N=4476)
Current marital status	Never married	9.06	1.41	4.9	1526
	Ever married	90.94	98.59	95.1	2950
	X ²	83.111	168.711	247.606	
	Rvalue	<.001	<.001	<.001	
Age brackets	15-24	47.32	9.01	26.49	1880
	25-34	39.26	26.2	32.16	1099
	35+	13.42	64.79	41.35	1497
	X ²	63.95	196.715	64.939	
	y)-value	<.001	<.001	<.001	
Highest educational level	No education	33.22	16.34	24.04	668
	Primary	54.7	69.01	62.48	2598
	Secondary-!	12.08	14.65	13.48	1210
	X ²	92.005	27.981	82.964	
	Rvalue	<.001	<.001	<.001	
Number of living children	0	9.73	0.28	4.59	1407
	1-2 children	44.3	14.65	28.18	940
	3-4 children	29.19	27.89	28.48	942
	5+	16.78	57.18	38.74	1187
	X ²	113.601	327.503	254.663	
	Rvalue	<.001	<.001	<.001	
Respondent currently working	No	53.7	30.99	41.35	2086
	Yes	45.97	68.45	58.19	2369
	Missing	0.33	0.56	0.46	
	X ²	5.907	34.793	7.312	
	Rvalue	<.001	<.001	<.001	

Region	Central	4.03	13.24	9.034	721
	Coast	15.44	10.99	13.02	422
	Eastern	12.08	14.65	13.48	833
	Nyanza	23.83	19.44	21.44	758
	Rift Valley	18.12	24.79	21.75	802
	Western	9.4	15.49	12.71	644
	North Eastern	17.11	1.41	8.58	296
	X²	108.488	31.27	56.964	
	Rvalue	<.001	<.001	<.001	
Household wealth	Low	41.95	29.86	35.38	1102
	Average	54.36	63.94	59.57	3063
	High	3.69	6.2	5.05	311
	X²	49.43	5.294	41.511	
	p-value	<.001	<.001	<.001	
Migration status	Migrated from urban	52.35	40.85	46.09	582
	Not migrated from urban	47.65	59.15	53.91	1924
	X²	2.645	36.168	31.766	
	p-value	<.001	<.001	<.001	
Exposure to mass media	Not listened at all	36.24	18.93	26.84	872
	Ever listened	63.76	81.07	73.16	3601
	X²	52.759	0.072	22.437	
	Rvalue	<.001	<.001	<.001	

Source: Primary Analysis of 2008-09 KDHS



CHAPTER FIVE

DETERMINANTS OF UNMET NEED FOR FAMILY PLANNING AMONG WOMEN IN RURAL KENYA

5.0 Introduction

This chapter presents the results that were obtained from multivariate levels of analysis. Logistic regression was done - multiple logistic regression analysis- in order to determine the possible effects of each of the variables in question when compounded to the unmet need for family planning in Kenya's rural areas. The use of multivariate level of analysis was also necessitated by the fact that it allows for the dependent variable to be run against the selected independent variables so that net effect of each variable can be ascertained.

5.1 Determinants of Unmet Need for Family Planning

Three models were run in order to establish possible factors that determine unmet need for family planning among women in rural Kenya: *Model I* - unmet need for limiting child bearing; *Model II* - unmet need for spacing of child births; and *Model III* - overall unmet need for family planning. Each of these models is divided into four sub-models: Economic, Social, Demographic and Socio-familial factors.

5.2 Determinants of Unmet Need for Family Planning to Limit

Table 5.1 shows results of regression analysis on determinants of unmet need to limit child bearing. In terms of each of the variables, household wealth, education levels, region of residence, marital status and number of currently living children determine level of unmet need for family planning to limit child bearing in rural areas.

Household wealth is one determinant of level of unmet need for limiting child bearing. Women from households with greater wealth indices are more likely to experience lower levels of unmet need. As wealth levels increase, the level of unmet need for limiting child bearing reduces. Ojaka (2008) associates this to the fact that women from wealthy households are capable of purchasing family planning services, thus are able to use contraception to limit child bearing.

Several studies have found out there is no clear association between a woman's education level and her demand for family planning (Ojaka 2008; Wangila 2001; Westoff, 2006). Findings of this study reveal that women who have been educated up to primary level are most likely to experience unmet need to limit child bearing compared to those who have not attempted school or their counterparts who have attained education beyond secondary school. In fact, women with secondary or higher levels of education are least likely to experience unmet need for family planning to limit child bearing. Thus, it is arguable that education is negatively associated with unmet need to limit child bearing even though the association is not linear (Wangila, 2001).

Compared to women from Central Province, those from Eastern Province and North Eastern Province are less likely to have unmet need for limiting. This may be associated with the fact that women in these areas are not interested in limiting their child bearing and therefore have not seen the need to seek for contraception. Women in rural areas of these provinces have exhibited greater number of living children, evidence that contraception is not fully embraced by the women.

Marital status is also associated level of unmet need. Women who have ever been married are more likely to experience unmet need for family planning to limit child bearing. Unmarried women are 4 times more likely to have unmet need for family planning to limit child bearing ($p < 0.001$). Exposure of these women to frequent coital activity may be a reason behind high levels of unmet need as witnessed among them.

Such women are therefore more likely to lack opportunity to control their child bearing in terms of numbers.

As the number of living children a woman has increases, her level of unmet need for family planning is likely to rise. As such, the findings as shown in Table 5.1 reveal that women with five or more children are the most affected with this problem of unmet need. The reason why women in rural areas may find themselves having many child births is because they are unable to access and utilize family planning services.

Table 5.1: Factors that Determine Unmet Need for Family Planning to Limit Child Births

Variable	Log Odds	S.E.	d.f.	p-value	Odds Ratio
Household wealth index			2	<0.001	
Low	0.000				1.000
Average	-0.378	0.154			0.685**
High	-0.060	0.293			0.941
Highest level of education			2	<0.001	
No education	0.000				1.000
Primary	0.357	0.197			1.429***
Sec 4-	-0.132	0.249			0.876
Region of residence			6	<0.001	
Central	0.000				1.000
Coast	-0.4382	0.392			0.682
Eastern	-0.523	0.386			0.413**
Nyanza	-0.523	0.467			0.593
Rift valley	-0.015	0.357			0.985
Western	-0.087	0.452			0.916
North Eastern	-2.585	1.277			0.075**
Marital status			1	<0.001	
Never married	0.000				1.000
Ever married	1.432	0.492			4.187**
Number of living children			3	<0.001	
1-2 children	3.261	1.063			26.087**
3-4 children	3.846	1.075			46.789*
5+ children	4.571	1.079			96.596*
Constant	-7.680	1.054	1	<0.001	0.000*

Note: *p-value<0.001; **p-value<0.05; ***p-value<0.01

Source: *Primary Analysis of 2008-09 KDHS*

5.3 Determinants of Unmet Need for Family Planning to Space

In table 5.2 below, regression analysis reveal that rural women's current involvement in employment, their highest education levels, region of residence, age, marital status, number of living children and exposure to mass media all determine their levels of unmet need to space their births.

Results shown on Table 5.2 reveal that a rural woman's employment status still remains an important determinant of her level of unmet need for spacing child births. As such, it is clear that women who are currently employed are less likely to experience unmet need to space compared to women who are not employed. Casterline et al (1997) argue that women who are employed have the capacity to make decision and to purchase contraceptives to space their births. Moreover, it is arguable that currently employed women would need adequate time to concentrate more on their employment-related activities than family matters, as such would opt to space their births (Becker 1991) and with the difficulty in acquiring maternity leave, employed women in rural areas would not want to frequent seek for maternity leaves from their employers, thus would want to have wider spaces between their births before seeking for another leave.

A rural woman's level of education can predict level of unmet need for contraception to space. This is because the lower the level of education, the greater the chances that such a woman would have unmet need for spacing. From Table 5.2, it is evident that women with primary education are most likely to have unmet need for spacing. However, the level of unmet need reduces with rise in education level, so that individuals with education above secondary level are least likely to experience unmet need for spacing child births. It is arguable that education imparts knowledge on the importance of using contraception to space child births. Moreover, education presents a woman with opportunity to interact with other women from diverse cultural and geographical bounds, from which they are able to acquire new information and skills including use of family planning to space.

Table 5.2 further shows that women in rural areas of Coast, Nyanza and Rift Valley provinces have a higher likelihood of experiencing unmet need for spacing. A rural woman in Coast Province for instance, is about three times more likely to experience unmet need for spacing than a rural woman in Central Province. Similarly, women in Nyanza and Rift Valley provinces are 3.550 and 2.306 times (respectively) more likely to have unmet need for spacing their births ($p < 0.001$)

As age increases, a woman from rural areas' propensity of having unmet need for family planning to space child bearing decreases. This trend is consistent so that younger women are bound to experience higher risk of unmet need for contraception to space. As Wangila (2001) points out, as women grow older by age, they tend to achieve their desired family size. Moreover, older women tend to have a reduced coital frequency, and therefore may not need contraception to space their births (Ilobey, et al, 1996; Casterline, et al, 1997).

Marital status of a woman is another pointer of likelihood of experiencing unmet need for family planning to space. According to the regression analysis, married women in rural areas are almost 5 times more likely to have unmet need to space than their unmarried counterparts. In regard to this, women who have ever been married are more likely to experience unmet need mainly because of their exposure to frequent coital activity.

There is a high positive association between unmet need for family planning to space births and the number of living children a rural woman currently has. This is because higher number of children is usually accompanied by an increased demand for family planning (Wangila, 2001). As such, women in rural areas with more children are more likely to have greater unmet need to space births than those with fewer living children. As number of children a woman currently has increases, the level of unmet need to space births increases because as more children survive, women tend to achieve desired family size, thus will seek to further limit child bearing.

There is a distinct association between exposure to mass media, measured by the proportion who have ever listened to the radio, and unmet need for contraception to space. From the regression analysis, those who have ever listened to radio communications are less likely to have unmet need for spacing. This could be because mass media has often been used to influence fertility decisions among women, as well as to inform and motivate women to access contraception (Westoff and Rodriguez, 1995).

Table 5.2: Factors that Determine Unmet Need for Family Planning to Space Child Births

Variable	Log Odds	S.E.	df	p-value	Odds Ratio
Current employment status			1	<0.001	
Employed	0.000				1.000
Not employed	0.348	0.144			1.417**
Highest level of education			2	<0.001	
No education	0.000				1.000
Primary	-0.579	0.219			0.560**
Sec+	-0.988	0.284			0.372*
Region of residence			6	<0.001	
Central	0.000				1.000
Coast	1.073	0.514			2.924**
Eastern	0.322	0.523			1.380
Nyanza	1.267	0.6			3.550**
Rift valley	0.836	0.501			2.306***
Age			2	<0.001	
15-24 years	0.000				1.000
25-34 years	-0.732	0.174			0.481*
35+ years	^2.361	0.247			0.094*
Marital status			1	<0.001	
Never married	0.000				1.000
Ever married	1.547	0.296			4.699*
Number of living children			3	<0.001	
0	0.000				1.000
1-2 children	1.536	0.289			4.648*
3-4 children	1.389	0.322			4.011*
5+ children	1.275	0.356			3.579*
Exposure to mass media			1	<0.001	
Never listened	0.000				1.000
Ever listened	-0.543	0.175			0.581*
Constant	-4.493	0.462	1	<0.001	0.011*

Note: *p-value<0.001; **p-value<0.05; ***p-value<0.01

Source: Primary Analysis of 2008-09 KDHS

5.4 Determinants of Overall Unmet Need for Family Planning

According to the results displayed in Table 5.3, it is evident that there are several variables whose effects are significant at multivariate level of analysis. A woman's current employment status, household wealth index, highest level of education, age, marital status, number of living children and exposure to mass media communication have significant effect on her overall level of unmet need.

The multivariate analyses also show that a rural woman's employment status still remains an important variable in determining the level of unmet need for family planning. As such, it is clear that women who are currently employed are less likely to experience unmet need for family planning as compared to those women who are not employed. As far as Casterline, et al, (1997) is concerned, women who are employed have the capacity to make own decision and to purchase contraceptives.

Similarly, household wealth is another determinant of level unmet need among rural women in Kenya. This is because poorer households tend to have significantly higher levels of unmet need than wealthier ones. Like it was shown in the regression results, wealthier households have significantly lesser total unmet need for family planning. Moreover, it is evident that households with lower wealth indices are more likely to experience total unmet need for family planning. This conforms to argument posed by Ojaka (2008) that women from wealthier households are more likely to adopt family planning because they are more able to afford contraception.

A rural woman's level of education is inversely associated with level of unmet need for family planning. As such, the higher the level of education, the lower the likelihood of having unmet need for family planning. However, women who have attained primary education tend to have a significantly higher likelihood of experiencing unmet need for family planning than those who did not attempt any level of education. This is as well expected and Robey et al, (1996) are convinced that there seems to be no consistent relationship between level of education and level of unmet need for family planning.

As age increases, a rural woman's propensity of having unmet need for family planning decreases. This trend is consistent in relation to total unmet need for family planning. Thus, younger women are bound to experience higher risk of overall unmet need for contraception. As women grow by age, they tend to achieve desired family size (Wangila, 2001). Moreover, older women tend to have a reduced coital frequency, thus may not need contraception to control fertility (Robey, et al, 1996; Casterline, et al, 1997).

Consistent with the results of bivariate analysis, a woman's marital status is a significant determinant of unmet need for family planning. As such, an ever married woman in rural Kenya is 5.354 times more likely to have unmet need than one who has never been married. This disparity could be because most of rural women who have never been married are not as frequently engaged in coital practice as those who have ever been married, and because a number of them are still attending education. This could be the main reason as to why a lot of studies on unmet need for family planning have exclusively focused on married women rather than the total women population.

The greater the number of living children a woman has the higher her likelihood of experiencing unmet need for family planning. However, conspicuous from the results is the effect of number of living children on unmet need for limiting births. This positive association gives us an impression that the more children survive, the more women tend to attain their desired family size, and thus the desire to limit further childbearing (Wangila, 2001; Lwanga, 1999). Moreover, as more children survive, rural women feel the security and then desire to limit child bearing by adopting contraception. Hence, women with more children are more likely to exhibit greater levels of unmet need.

The more frequent a woman listens to mass media communications the lesser her chances of experiencing unmet need for family planning. According to Lasee and Becker (1997) in their analysis of 1989 KDHS data, there exists a strong association between women reporting that they have heard messages about family planning from mass media and contraceptive prevalence among these women. In this study, women

from rural Kenya who listen to radio are less likely to have unmet need for spacing births and total unmet need for family planning.

Table 5.3: Factors that Determine Overall Unmet Need for Family Planning

Variable	Log Odds	S.E.	df	p-value	Odds Ratio
Current employment status			1	<0.001	
Employed	0.000				1.000
Not employed	0.200	0.102			1.221**
Household wealth index			2	<0.001	
Low	0.000				1.000
Average	-0.218	0.12			0.804***
High	-0.152	0.237			0.859
Highest level of education			2	<0.001	
No education	0.000				1.000
Primary	-0.035	0.153			0.966
Sec+	-0.531	0.195			0.588**
Age			2	<0.001	
15-24 years	0.000				1.000
25-34 years	-0.671	0.147			0.511*
35+ years	-1.070	0.164			0.343*
Marital status			1	<0.001	
Never married	0.000				1.000
Ever married	1.678	0.256			5.354*
Number of living children			3	<0.001	
0	0.000				1.000
1-2 children	1.582	0.263			4.867*
3-4 children	1.821	0.285			6.18*
5+ children	2.298	0.295			9.955*
Exposure to mass media			1	<0.001	
Never listened	0.000				1.000
Ever listened	-0.267	0.127			0.765**
Constant	-4.179	0.316	1	<0.001	0.015*

Note: *p-value<0.001; **p-value<0.05; ***p-value<0.01

Source: Primary Analysis of 2008-09 KDHS

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This chapter provides a synopsis of the study, conclusions and recommendations made with reference to the findings obtained from the analysis.

6.1 Summary and Conclusions

This study aimed at establishing the determinants of unmet need for family planning among women in Kenya's rural areas. Women in rural areas, according to the 2008-09 KDHS are exposed to greater chances of experiencing unmet need for family planning (KNBS & ICF Macro, 2010), and therefore, a proper understanding of factors that determine this is important. In order to establish this, an operational framework that was developed by Casterline et al (1997) was modified in order to suit this study. This framework considers various economic, social, demographic and social-familial and individual factors as determinants of unmet need for family planning in rural Kenya. Frequency distributions, cross tabulations, simple and multivariate regression was used to analyze data

A woman's marital status is a significant determinant of unmet need for family planning. Both bivariate and multivariate analysis results reveal that women who have ever been married are more likely to have unmet need for spacing, unmet need for limiting and overall unmet need for family planning. Moreover, bivariate findings reveal that only a very small proportion of never married women experience unmet need for family planning, and could be the basis of the bias that a lot of studies on unmet need for contraception have had against unmarried women.

Multivariate regression analysis results also reveal that age is inversely associated with total unmet need for family planning. As age increases, a woman's propensity of having unmet need for family planning decreases, and this inverse relationship is also true for unmet need to limit child births. Thus, younger women are bound to experience higher risk of overall unmet need for contraception and for limiting child bearing. In this regard, from these results, those aged between 15-24 years experience the highest levels of unmet need for limiting child bearing. In his view, Wangila (2001) asserts that as a woman's age increases, she would tend to achieve desired family size. Moreover, older women tend to have a reduced coital frequency, thus may not need contraception to control fertility.

As past studies have shown, inconsistent association between a woman's level of education and her propensity to experience unmet need for contraception is an African phenomenon (Robey, et al, 1996; Wangila, 2001; Ojaka, 2008). Similarly, this study reveals an inconsistent association between these two variables. As such, according to simple regression results, while a woman's level of education seems to be inversely associated with the level of unmet need for contraception especially for women with no education and secondary or beyond education, women who have attained primary education tend to have a

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significantly higher likelihood of experiencing unmet need for limiting than those who did not attempt any level of education. Multivariate regression results show that this inverse association is only significantly consistent for the case of unmet need for spacing.

Number of living children is another determinant of unmet need among women in Kenyan rural areas. According to the findings of the regression analysis, the number of living children is positively associated with level of unmet need for spacing, unmet need for limiting and the overall unmet need for family planning. It is also worth noting that there is a strong association between number of living children and unmet need for spacing, unmet need for limiting and total unmet need for contraception. From this, it is

therefore likely that women continue to give birth to more children because they do not use any contraception, even though their desire would be to limit and space these child births.

As would be expected, currently employed women are less likely to experience unmet need for family planning. The results of multivariate logistic regression show that rural women who are not in employment have higher levels of unmet need for spacing and overall unmet need for family planning, and thus, a significant pointer that women who engage in employment have lower chances of experiencing unmet need for spacing child births as well as total unmet need for family planning. Women who work are more likely to actively seek for contraception in order to space births so that they may get adequate time for the demanding job-related activities.

Unmet need for family planning among rural women in Kenya is also determined by region of residence. Results of multivariate regression analysis show that apart from in Eastern Province, rural women from other provinces are more likely to experience higher unmet need for spacing and total unmet need for family than their counterparts in Central Province. Significantly, findings of multivariate regression analysis show that women in Coast, Nyanza and Rift Valley provinces are far more likely to have unmet need for spacing childbirths.

Household wealth is another significant determinant of a woman's unmet need for family planning. Regression analysis results reveal that the level of household wealth is negatively related to unmet need for limiting, unmet need for spacing, and overall unmet need for family planning. As such, households with greater wealth indices are less likely to experience unmet need. It is therefore evident from the analysis that women from households with high or average wealth indices are far much less likely to have unmet need for contraception. This view is shared by Ojaka (2008), and the argument is that those in upper wealth quintile are more likely to get access to contraception given their greater ability to purchase contraceptives than their counterparts in lower wealth quintile.

Lastly, there is significant association between exposure to mass media communications and unmet need for family planning among rural women. Women who have ever listened to radio, according to the results of simple and multivariate analysis, are less likely to experience unmet need for spacing, unmet need for limiting births and overall unmet need for contraception. This also conforms with Wangila, (2001) whose bivariate and multivariate results revealed that listening to the radio has an effect on increase in uptake of contraceptives among women in Kenya, thus leading to a reduced unmet need for contraception.

6.2 Recommendations

In view of the findings of this study, a number of recommendations are put forth for policy development and implementation as well as for further research.

6.2.1 Recommendations for Policy

Findings of this study reveal that women in Kenyan rural areas grapple with unmet need for contraception to space childbearing more than unmet need to limit child births. This therefore means that these women have a potential demand for family planning services that would assist them to undertake adequate child

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spacing. Government departments and non-governmental organisations involved in programmatic implementation should understand that rural women require contraceptives mainly to space and a lot of effort should be put to reduce the proportion of women who need to space child births. This partnership between the government and the private sector should see the provision of contraceptives to the rural areas so that those who need to use the services for spacing may access them easily. However, unmet need for limiting child birth should not be forsaken at the expense of provision of contraceptives to space deliveries. Also, family planning programmatic activities in rural areas of Kenya should be region-specific. This is to say, policy makers and programme implementers should consider regional variations so that women from regions such as Nyanza, Western, North Eastern that require contraception to space and limit child births

should be given priority. Moreover, this study has established that women from Eastern province have a great unmet need for limiting childbearing. Programmes and campaigns by government agencies should focus on specific demands of regions and provide appropriate remedies to unmet need for family planning based on these demands.

That level of education is a significant determinant of unmet need for family planning, and that rural women who have acquired higher levels of education are less likely to experience unmet need for contraception, the government should encourage active female involvement in education, promote girl child education in rural areas and reward women who have achieved education excellence in respective grades so as to encourage women's involvement in education to higher levels. The government therefore should also introduce programmes that would lower school drop outs among female students so as to ensure their progress from primary school to education beyond secondary school.

By ensuring an improved economic status of women, unmet need for family planning would be reduced. Policy makers and programmers have the responsibility to undertake programmatic activities that are aimed at improving economic status of women in rural areas. Programmes geared towards wealth creation such as

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women's involvement in micro-finance operations, participation in employment opportunities, involvement in cash crop agricultural production, and the economic empowerment among rural women would enable the women acquire access to contraception then help reduce the high levels of unmet need for family planning in rural areas.

Organisations and government agencies involved in family planning implementation should develop programmes that target different age groups. This is because the findings of this study reveal that levels of unmet need for family planning is dependent on age groups. Because younger women are at a relatively higher chance of experiencing unmet need for family planning, a lot of efforts by these organizations should be focused on delivering family planning services to women who are in lower reproductive ages.

Information on family planning should be packaged in a way that suits best these women to promote their utilization of family planning.

Lasdy, a lot of focus should be on family planning for married women, given that a vast majority of these women in rural areas experience unmet need for family planning. Going by the findings of this study, married women are the ones who greatly experience unmet need for family planning, and therefore should be given more attention than their unmarried counterparts. Therefore, family planning intervention strategies and policy decisions should focus mainly on the married women.

6.2.2 Recommendation for Further Research

With fertility among adolescents still soaring high, future studies should focus on unmet need for contraception among this group. A good number of adolescents are sexually active and still, several of them experience a spontaneous rather than planned sexual life, which in turn have led to increased cases of unplanned pregnancies. Unplanned pregnancies, especially among adolescents, has led to an increase school drop out rate in Kenya (Integrated Regional Information Networks, 2008) and a major cause of unsafe abortions among teenagers (Izugbara, et al, 2011). Given that unplanned pregnancies is one of the pointers to the existence of unmet need for contraception among a women population, it is important that future researchers undertake studies on determinants of unmet need for family planning among adolescent women

future studies should also attempt to assess the factors that determine unmet need for family planning among women in urban areas of Kenya. The significance of such studies will inform the place of residence-specific programmatic actions. Moreover, such studies will provide adequate information to offer solution to the currently increasing fertility among women in poor urban settlements and slums.

Studies on unmet need for contraception should focus mainly on women who have ever been married rather than combining all women in their reproductive ages. This is because the inclusion of the never

married women underestimates the magnitude of unmet need for family planning among a population of women. As such, results of analysis in which never married women have been included will show lower rates of unmet need for family planning and this may be misleading especially because quite a good number of the never married women do not engage in frequent coital activity that would expose them to greater risk of pregnancy.

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Appendix I: Factors that Determine Unmet Need for Family Planning to Limit Child bearing

Variable	Log Odds	S.E.	d.f.	p-value	Odds Ratio
Current employment status			1	<0.001	
Employed	0.000				1.000
Not employed	0.060	0.133			1.061
Household wealth index			2	<0.001	
Low	0.000				1.000
Average	-0.378	0.154			0.685**
High	-0.060	0.293			0.941
Highest level of education			2	<0.001	
No education	0.000				1.000
Primary	0.357	0.197			1.429***
Sec+	-0.132	0.249			0.876
Region of residence			6	<0.001	
Central	0.000				1.000
Coast	-0.382	0.392			0.682
Eastern	-0.883	0.386			0.413**
Nyanza	-0.523	0.467			0.593
Rift valley	-0.015	0.357			0.985
Western	-0.087	0.452			0.916
North Eastern	-2.585	1.277			0.075**
Age			2	<0.001	
15-24 years	0.000				1.000
25-34 years	-0.045	0.243			0.956
35+ years	0.278	0.252			1.321
Marital status			1	<0.001	
Never married	0.000				1.000
Ever married	1.432	0.492			4.187**
Number of living children			3	<0.001	
0	0.000				1.000
1-2 children	2.61	1.063			26.087**
3-4 children	3.846	1.075			46.789*
5+ children	4.571	1.079			96.596*
Migration status			1	<0.001	
Migrated from urban	0.000				1.000
Not migrated from urban	-0.051	0.124			0.951
Exposure to mass media			1	<0.001	
Never listened	0.000				1.000
Ever listened	0.093	0.173			1.097
Constant	-7.680	1.054	1	<0.001	0.000*

Note: *p-value<0.001; **p-value<0.05; ***p-value<0.01

Appendix 2: Factors that Determine Unmet Need for Family Planning to Space Child Births

Variable	Log Odds	S.E.	d.f.	p-value	Odds Ratio
Current employment status			1	<0.001	
Employed	0.000				1.000
Not employed	0.348	0.144			1.417**
Household wealth index			2	<0.001	
Low	0.000				1.000
Average	-0.023	0.167			0.977
High	-0.253	0.368			0.776
Highest level of education			2	<0.001	
No education	0.000				1.000
Primary	-0.579	0.219			0.560**
Sec+	-0.988	0.284			0.372*
Region of residence			6	<0.001	
Central	0.000				1.000
Coast	1.073	0.514			2.924**
Eastern	0.322	0.523			1.380
Nyanza	1.267	0.6			3.550**
Rift valley	0.836	0.501			2.306***
Western	0.509	0.608			1.664
North Eastern	20.627	10573.431			908230423.6
Age			2	<0.001	
15-24 years	0.000				1.000
25-34 years	-0.732	0.174			0.481*
35+ years	-2.361	0.247			0.094*
Marital status			1	<0.001	
Never married	0.000				1.000
Ever married	1.547	0.296			4.699*
Number of living children			3	<0.001	
0	0.000				1.000
1-2 children	1.536	0.289			4.648*
3-4 children	1.389	0.322			4.011*
5+ children	1.275	0.356			3.579*
Migration status			1	<0.001	
Migrated from urban	0.000				1.000
Not migrated from urban	0.078	0.141			1.081
Exposure to mass media			1	<0.001	
Never listened	0.000				1.000
Ever listened	-0.543	0.175			0.581*
Constant	-4.493	0.462	1	<0.001	0.011*

Note: *p-value<0.001; **p-value<0.05; ***p-value<0.01

Appendix 3: Factors that Determine Total Unmet Need for Family Planning

Variable	Log Odds	S.E.	d.f.	p-value	Odds Ratio
Current employment status			1	<0.001	
Employed	0.000				1.000
Not employed	0.200	0.102			1.221**
Household wealth index			2	<0.001	
Low	0.000				1.000
Average	-0.218	0.12			0.804***
High	-0.152	0.237			0.859
Highest level of education			2	<0.001	
No education	0.000				1.000
Primary	-0.035	0.153			0.966
Sec+	-0.531	0.195			0.588**
Region of residence			6	<0.001	
Central	0.000				1.000
Coast	0.183	0.313			1.200
Eastern	-0.483	0.313			0.617
Nyanza	0.204	0.372			1.226
Rift valley	0.304	0.292			1.355
Western	0.127	0.369			1.136
North Eastern	0.976	1.141			2.654
Age			2	<0.001	
15-24 years	0.000				1.000
25-34 years	-0.671	0.147			0.511*
35+ years	-1.070	0.164			0.343*
Marital status			1	<0.001	
Never married	0.000				1.000
Ever married	1.678	0.256			5.354*
Number of living children			3	<0.001	
0	0.000				1.000
1-2 children	1.582	0.263			4.867*
3-4 children	1.821	0.285			6.18*
5+ children	2.298	0.295			9.955*
Migration status			1	<0.001	
Migrated from urban	0.000				1.000
Not migrated from urban	0.017	0.097			1.018
Exposure to mass media			1	<0.001	
Never listened	0.000				1.000
Ever listened	-0.267	0.127			0.765**
Constant	-4.179	0.316	1	<0.001	0.015*

Note: *p-value<0.001; **p-value<0.05; ***p-value<0.01