

UNMET NEED FOR CONTRACEPTION AMONG MEN IN KENYA: EVIDENCE FROM KDHS 1998

BY

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DECLARATION

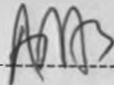
This project is my original work and has not been presented before in any other University for the award of a degree.

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DEDICATION

This project is dedicated to the most important persons in my life: to my parents, Onyango Akuk and Agneta Abonyo; to my sisters, Agnes Atieno, Patricia Akuk and Paskalia Were; and to my fiancée, Aory Roselyne.

ABSTRACT

The standard measure of unmet need for FP services focuses on married women and captures the apparent discrepancy between the women's fertility preferences and their contraceptive behaviour. Very few attempts have been made to define unmet need for men despite the growing support for increased participation of men in reproductive health (RH). As such, there is no generally agreed upon measure of men's unmet need for contraception, and where attempts have been made to define unmet need for men, no attempts have been made to study the determinants of such need.

The present study aimed at analyzing unmet need for contraception among married men in Kenya using data from the 1998 KDHS. It specifically aimed at estimating the magnitude of such need using the measure that had been applied to the previous two surveys of 1989 and 1993. It also aimed at investigating the relationship between men's unmet need for contraception and the proximate determinants of the need as well as the nature of such relationship if men's background characteristics were controlled for.

The current status model that helps to determine unmet need from the respondents' contraceptive behaviour and fertility preferences at the time of the survey was used to determine the magnitude of unmet need for contraception among men. Cross-tabulation with Chi-square was used to analyze the relationship between unmet need and each of the independent and intermediate factors considered in this study. Multivariate logistic regression analysis was used to analyze the determinants of unmet need for contraception among married men.

According to the estimates from the 1998 KDHS, the level of men's unmet need for contraception stood at 23.3 percent. This represents a decrease of only 0.02 percentage points

from the 1993 estimates of 23.5 percent and a decrease of 8.8 percentage points from the 1989 estimates of 32.1 percent made by Ngom (1997). All the independent factors i.e. age, education level, place of residence, region, ethnicity, religion and number of living children have significant associations with unmet need for contraception among men. None of the intermediate factors i.e. number of methods known spontaneously, discussion of FP with partner, and respondents' approval of FP has significant association with men's unmet need.

Results of multivariate analysis show that the proximate determinants alone fail to account for significant explanations of the variations in men's unmet need for contraception. When the background factors are controlled for, number of methods known spontaneously and discussion of FP with partner turn out to be significant. Among the background factors, age, number of living children and ethnicity emerge as the most powerful determinants of unmet need for contraception among men.

For policy concerns, the study recommends programmes aimed at promoting spousal communication and increasing male involvement in RH including encouragement to turn the near universal knowledge of and favourable attitude toward contraception into practice. The slow pace of the decline in men's unmet need between 1993 and 1998 compared to between 1989 and 1993 should also form the basis of programme focus. For further research, the study recommends the need to formulate a standard measure of men's unmet need, to extend such a measure to the sexually active unmarried men, and the need to develop appropriate indicators for the proximate determinants of the need. It also recommends the need for the use of qualitative research techniques, especially for findings which do not conform to expectations or are not consistent with findings for women in other studies.

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LIST OF ABBREVIATIONS

AVSC	- Association of Vasectomy and Surgical Contraception.
CBS	- Central Bureau of Statistics.
CDR	- Crude Death Rate.
CEB	- Children Ever Born
DFID	- Department For International Development.
DPHC	- Division of Primary Health Care.
FP	- Family Planning.
FPAK	- Family Planning Association of Kenya.
GDP	- Gross Domestic Product.
IEC	- Information Education and Communication.
IMR	- Infant Mortality Rate.
IUD	- Intra-Uterine Device.
KAP	- Knowledge, Attitude and Practice.
KDHS	- Kenya Demographic and Health Survey.
NCPD	- National Council for Population and Development.
OLS	- Ordinary Least Square.
PATH	- Program for Appropriate Technology in Health.
Prot/other Xtian-	Protestant/ other Christian.
RH	- Reproductive Health.
SAPs	- Structural Adjustment Programmes.
STIs	- Sexually Transmitted Infections.
TFR	- Total Fertility Rate.

- UNFPA** - United Nations Population Fund.
- USAID** - United States Agency for International Development.
- WFS** - World Fertility Survey.

CHAPTER ONE

GENERAL INTRODUCTION

In this chapter, I have given a brief background to male involvement initiatives in reproductive health (RH) in Kenya. I have also given some brief background information on Kenya covering the country's geography, history, cultural aspects, economy, and population and population policy. Other aspects considered in this chapter include the statement of the study problem, the study objectives, justification of the study as well as its scope and limitations.

1.1. BACKGROUND TO THE STUDY

The Government of Kenya launched the National Family Planning Programme in 1967 owing to the growing concern over the high rate of population growth. The programme aimed to contribute to an increase in the number of family planning (FP) acceptors, which would help avert births and contribute to the reduction in the high rate of population growth from 3.3% in 1969 to 3.0% per annum in 1979.

However, in 1979 the population growth rate was estimated at 3.8% per annum with an all-time high total fertility rate (TFR) of 7.9 children per woman. This implied that the programme had limited success in this area. One of the reasons is that the programme targeted only married women under the assumption that births could only take place within marital unions, never taking into account the role of the never-married women including adolescents, nor did it take into consideration men's role in reproductive decision-making.

It soon became apparent that these groups had key roles to play, leading to the expansion in the programmes to cater for their reproductive health needs as well. This was coupled with the growing international support from the mid-1980s of the need to increase men's participation in reproductive health (RH). In the African context, it was based on the realization that men are traditionally the heads of their households. They are therefore key figures in domestic decision-making, especially about fertility behaviour and preferences.

The first male initiative in RH in Kenya was established by the Family Planning Association of Kenya (FPAK) in 1987. The initiatives contained both clinical and non-clinical components, and had the goals of redesigning FP programmes to include the needs and concerns of men; developing special programmes to change men's negative attitudes regarding FP; increasing the involvement of men aged 18-59 years; and promoting spousal communication and support for female contraception.

The clinical component of the initiatives consisted of a major intervention to provide FP and services for sexually transmitted infection (STI) prevention and treatment for men in a clinic environment. This led to the establishment of male-only and male-friendly clinics. For example, by 1996, there were male-only clinics in three districts, namely, Kakamega, Kisumu and Nakuru.

The non-clinical components consisted of three major interventions, that is, the multi-media information, education and communication (IEC) campaign, the workplace motivators, and service provider training. The multi-media IEC campaign sought to increase knowledge and spousal communication of FP among married men who do not practice FP. The workplace motivators were

supposed to use the materials to educate their workmates, peers and teenage boys in their communities. Service provider training was meant to equip non-clinical service providers with necessary skills in client management, counselling, client-provider interaction, and knowledge of men's health needs.

Besides FPAK, other organizations have also contributed to the goal of reaching men with RH services in the country. For example, Population Health Services and Marie Stopes opened male-only clinics in Nairobi, Mombasa, Meru, Kisii and Kisumu with technical support from the Association of Vasectomy and Surgical Contraception (AVSC) to provide vasectomy services and counselling. The Program for Appropriate Technology in Health (PATH) has designed a programme for specific groups such as security guards in Nairobi by incorporating RH education into their orientation and refresher training.

There is, however, no known empirical study on the impact of these initiatives. The main weakness in most of them is that they are based on knowledge, attitude and practice studies, which do not allow for in-depth examination of the male-friendly services.

1.2. BACKGROUND INFORMATION OF KENYA

1.2.1. Geography

Kenya lies between 3° N and 5° S latitudes and between 34° E and 41° E longitudes. It falls entirely within the equatorial zone. The physical environment is made up of the savannah grasslands and woodlands, the tropical rainforest, and the semi-desert environments. Approximately 80% of the country's land area is arid or semi-arid and only 20% is arable.

The country is bordered to the north by Ethiopia, to the northwest by Sudan, to the west by Uganda, to the south by Tanzania, and to the east by Somalia. It covers an area of about 582,000 square kilometres, and has a 400-kilometre stretch of Indian Ocean shoreline.

1.2.2. History

Having been colonized by Britain from the late 19th century, Kenya gained her independence from the British rule on December 12, 1963. It was a multi-party state until 1982 when the constitution was amended to make it a one-party state. This was again changed in November 1991 when Parliament repealed the section of the Constitution that made the country a one-party state in line with political changes then taking place the world over.

1.2.3. Cultural Background

The country is multi-ethnic with about 43 ethno-linguistic groups. Each ethnic group has its own unique cultural practices that govern its social and economic organization. The major religions in the country include Christianity and Islam.

1.2.4. Economy

Agriculture is the mainstay of Kenya's economy. It accounts for 25% of the gross domestic product (GDP) while manufacturing accounts for about 14% (CBS, 2000). Tea, tourism, coffee and horticulture in that order are the main foreign exchange earners. Faced with declining GDP growth rates over the years, the Government implemented structural adjustment programmes (SAPs) in the agricultural, trade and financial sectors in 1986.

1.2.5. Population and Population Policy

Kenya's population increased from 5.4 million people in 1948 to 28.7 million in 1999 according to the 1999 census results (CBS, 2001). The growth rate per annum reached a peak of 3.8% between 1969 and 1979, and is estimated at 2.9% per annum between 1989 and 1999.

Since 1979, the country has been going through a fertility transition with the total fertility rate (TFR) declining from an all-time high of 7.9 children per woman in 1979 to 4.7 children per woman in 1998. Whereas the period between 1948 and 1989 saw declining mortality trends, recent figures show a reversal of this trend.

From a level of 25 deaths per 1000 population in 1948 to 10.6 in 1989, recent figures show that the crude death rate (CDR) has risen to 14 deaths per 1000 population. As for the infant mortality rate (IMR), from a level of 119 infant deaths per 1000 live births in 1969 to 66 in 1989, recent figures indicate that the level has risen to 74 infant deaths per 1000 live births.

Due to high fertility and declining mortality in the past, Kenya is characterized by a young population with almost 50% being less than 15 years of age. The bulk of the population lives in rural areas with only 18% living in urban areas. The figures of the 1999 census indicate that the sex ratio of the population was 98 males to 100 females (CBS, 2001).

The official Government policy is to reduce the population growth rates, reduce fertility further, reduce mortality, especially infant and child mortality as well as maternal mortality, modify spatial distribution by influencing rural-urban migration, and to improve health service provision,

especially RH.

In 1967, the National Family Planning Programme was launched and Kenya's population policy was seen in the light of this programme. In 1984, the Government issued Sessional Paper No.4 of 1984 on *Population Policy Guidelines* to guide population policy and programme implementation. In 1997, the Government issued Sessional Paper No.1 of 1997 on *National Population Policy for Sustainable Development* to address population and development issues. This was published in the year 2000 as Sessional Paper No. 1 of 2000 on *National Population Policy for Sustainable Development*. Population policy issues are also to be found in the National Development Plans, the latest covering the period 1997-2001.

Population programmes in the country include information, education and communication (IEC) programmes, family planning programmes, antenatal, intra-natal and post-natal care programmes, training programmes, counselling programmes, research programmes as well as legislation measures to give the programmes some legal basis. The Government emphasizes a multi-sectoral and multi-dimensional integrated approach to implementing the population policy under the guidance of the National Council for Population and Development (NCPD), which was established in 1982.

1.3. STATEMENT OF THE PROBLEM

Family planning programmes in general have traditionally focused on women as the primary beneficiaries of service provision. Evidence of this fact is the availability of more modern female methods of contraception such as the pill, intra-uterine device (IUD), implants, diaphragm, foam,

jelly, female sterilization and injectables than male methods, which are mainly the condom and male sterilization or vasectomy.

As a result, the current measure of unmet need for FP services focuses on women. According to the current definition, the measure refers to the proportion of married women who are not using any method of contraception, who physiologically can have children, and who do not want any more children, that is, unmet need for limiting births, or who wish to postpone the next birth for at least two more years, that is, unmet need for spacing births. It also includes pregnant or amenorrhoeic women who are in that condition, yet they did not want to become pregnant at the time but were not using any contraceptives (Westoff, 1994:6).

The potential for involving men in FP and contraceptive decision-making is a recent concern that has developed largely as a result of efforts to prevent the spread of HIV/AIDS (Karra, Stark and Wolf, 1997). In Kenya, attempts to involve men in FP were first started by FPAK in 1987, later supported by other organizations such as Marie Stopes.

Statistics have shown that for men, just as for women, there is a discrepancy between contraceptive knowledge and contraceptive use, with the level of knowledge being higher than that of use. For example, according to the 1998 Kenya Demographic and Health Survey (KDHS), contraceptive prevalence rate among currently married men aged 15-54 years was 62% while knowledge of any method was reported to be 99.2%. Similarly, 98.6% of currently married men reported knowledge of any method of contraception while only 39% reported using such methods.

The origin of the concept of unmet need can be traced to the Knowledge, Attitude and Practice (KAP) studies of the 1950s and 1960s (Westoff, 1994). The concept developed from the various refinements made to the KAP-Gap measurement, especially among women in the developing world. Given that statistics show a gap between men's knowledge and use of contraception, refinements can be made to this KAP-Gap measure as well to define unmet need for men as it has been done for women.

One of the criticisms levelled against the current measure of unmet need, therefore, is that it ignores men whose responses could be integrated with those of their wives. The measure fails to take into account the possibility that men can also have unmet need for FP services against the backdrop of concerted efforts to involve men in FP especially in the developing world. Taking into account their current contraceptive practice and reproductive preferences, men can also have unmet need for contraception given the limited number of methods available; for prevention of STIs and HIV/AIDS; or for quality services.

An attempt to define unmet need for contraception for men was made by Pierre Ngom (1997). He used the Demographic and Health Survey (DHS) data for Ghana (1988 and 1993) and Kenya (1989 and 1993). His definition of unmet need was the proportion of married men who were not using any modern method of contraception at the time of the survey, but who desired no more children. Using this definition, he found that the level of men's unmet need for contraception in Ghana was 16.3% in 1988 and 24.2% in 1993 while for Kenya, it was 32.1% in 1989 and 23.5% in 1993 (Ngom, 1997).

The findings indicate that the level of unmet need for contraception among Kenyan men declined by 8.6 percentage points between the two surveys. There is need to find out what the trend was by 1998. Furthermore, there is need for further analysis of the relationship between possible reasons for non-use of contraception among men with unmet need against such background factors as age, level of education, place of residence, religion, ethnicity and the number of living children.

The present study tried to answer the following research questions:

- 1) What is the level of men's unmet need for contraception according to the 1998 Kenya Demographic and Health Survey?
- 2) Do the proximate determinants of unmet need for contraception among married men have significant relationship with the likelihood of having such a need?
- 3) Does the nature of such relationship change significantly when men's socio-economic, cultural and demographic characteristics are controlled for?

1.4. STUDY OBJECTIVES

1.4.1. General Objective

The general objective of this study is to analyze the unmet need for contraception among currently married men in Kenya using data from the 1998 Kenya Demographic and Health Survey (KDHS).

1.4.2. Specific Objectives

The specific objectives of the study are:

- 1) To estimate the magnitude and components of unmet need for contraception among married men at the time of the survey.
- 2) To investigate the relationship between men's unmet need for contraception and the proximate determinants of unmet need among such men.
- 3) To find out the nature of such relationship when men's background characteristics such as age, education, place of residence, region of residence, religion, ethnicity and number of living children are controlled for.

1.5. JUSTIFICATION OF THE STUDY

Given the growing emphasis on the need for male involvement in FP if the programmes are to succeed, it is important that men's unmet need for contraception is understood as well. This is especially so in Africa where in most societies, men continue to have more power in reproductive decision-making including the decision on the number of children and whether or not to use FP. As Karra, Stark and Wolf (1997) have noted, the most successful FP programmes target both men and women and promote communication about contraception between spouses. Understanding men's unmet need is therefore a step towards the success of FP programmes, given the key role men play in family life.

Understanding men's unmet need for contraception will further help in designing methods and programmes that are male-friendly. This could increase the use of RH services among men and therefore form part of a global strategy for achieving RH for all. As a result, this will contribute towards rectifying the gender imbalance in the use of RH services, which could further lead to male support of female FP.

The establishment of male-friendly FP programmes requires resources including financial, human, technical and material resources. For example, it may be necessary to establish male-only clinics, as has happened in Kenya, given that conventional clinics that primarily serve women may be inconvenient for meeting the RH needs of men. An understanding of men's unmet need for contraception, therefore, can act as a basis for lobbying for financial, human, technical or material support for FP programmes.

The concept of unmet need for contraception has been traditionally used to refer to married women's need. However, with increasing interest in the needs of adolescents and men, attempts have been made, for instance by Westoff and Bankole (1995), to develop estimates for both the never-married and formerly married women and by Pierre Ngom (1997) to develop estimates for men from the DHS for Ghana (1988 and 1993) and Kenya (1989 and 1993). This study tries to develop estimates for currently married men from the KDHS 1998, and to investigate the relationship between such need and men's socio-economic, cultural and demographic characteristics.

1.6. SCOPE AND LIMITATIONS

This study aimed at estimating the magnitude of unmet need for contraception among currently married men in Kenya from the 1998 KDHS. It further aimed at finding out the relationship between men's unmet need and socio-economic, cultural and demographic characteristics such as age, education, place of residence and number of living children for currently married men. The focus was on married men because given the nature of the definition adopted (see the section on 'Definition of Concepts'), the question on the desire for more children was not applicable to

unmarried men. Furthermore, the concept of unmet need was restricted to the need for modern methods of contraception because traditional methods such as abstinence and withdrawal may not be efficient in satisfying the needs of users.

The above limitation poses another problem in the definition of unmet need. In the 1998 KDHS male survey, questions on current contraceptive practice and desire for additional children, which are central to the measurement of unmet need, were asked of married men. However, such questions were asked without reference to any specific wife/ partner with whom the respondent had unmet need, and therefore identifying the wife/ partner with whom the respondent has or does not have unmet need for contraception is not easy. Secondly, lack of adequate information on men's spacing needs from the KDHS limits the estimation of men's unmet need for contraception to a KAP-Gap measure.

Another limitation is posed by the current status model adopted in determining the magnitude of unmet need for contraception among men. The model helps to estimate unmet need from the fertility preferences and contraceptive behaviour of respondents at the time of the survey. However, preferences and contraceptive practice do change over time. Those who desired more children at the time of the survey may change their preferences to few or no more children after the survey. At the same time, those who were using modern methods of contraception at the time of the survey may discontinue use immediately after the survey due one reason or another.

Furthermore, the fact that only male responses are used to determine the level of unmet need when contraceptive practice is a couple affair limits the results of the study. As such, the level of

unmet need determined in this study may either understate or over-state the prevalence of unmet need for contraception among men.

The study was affected with the quality of the KDHS male survey data. A total of 3407 men age 15-54 years were interviewed out of 3845 men identified for interview giving a response rate of 89%. Whereas the response rate is encouraging, the authenticity of information given on certain variables cannot be established. This can be attributed the response bias. The other problem stems from the extent of coverage of the survey given that North Eastern province was left out in the survey while some districts were over-sampled.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

A review of some of the existing literature on the concept of unmet need, its determinants and variations by various characteristics is presented in this chapter. This covers some of the studies that have been carried out in and outside Kenya on women, men and couple unmet need. The theoretical framework upon which this study is based including conceptual and operational frameworks, the operational model, definition of concepts, list of study variables, and the study hypotheses are also presented in this chapter.

2.1. LITERATURE REVIEW

2.1.1. The Concept of Unmet Need

The concept of unmet need for contraception has its origin in the early Knowledge, Attitude and Practice (KAP) studies of the 1950s and 1960s (Westoff, 1994). The term KAP itself was used to refer to married women, especially in the developing world, who wanted no more children but were not using any method of contraception for one reason or another. Such reasons included ignorance of the methods, unavailability of readily available methods, conflicting values, husband's opposition and lack of motivation.

With time, various refinements of the measurements were introduced in subsequent research and the term "unmet need" was used to represent the concept. Such refinements included, among others, restricting the measure to women exposed to the risk of pregnancy in connection with the current pregnancy status, fecundity and proneness to postpartum amenorrhoea. But as Westoff and Pebley (1981) have argued, there is probably no best estimate of unmet need and the concept

may mean different things to different investigators.

Dixon-Mueller and Germain (1992) argue that the need for contraception is not defined by the woman herself, but by the researcher who deduces it from the apparent inconsistency between the woman's contraceptive behaviour and reproductive preferences. They further argue that it has not been easy to capture the elusive unmet need for FP, and that it tends to hide from researchers and to change its size and shape depending on how survey questions are asked, what criteria are used, and what assumptions are made. It is thus expected that the need for men should not be defined by the man himself, but to be deduced from the apparent inconsistency between the man's contraceptive behaviour and reproductive preferences.

Charles Westoff (1994), writing on the concept of unmet need, argues that the current measure includes married women who are not using any method of contraception, who are fecund, and who do not want any more children i.e. unmet need for limiting, or who wish to postpone the next birth for at least two more years i.e. unmet need for spacing. It also includes pregnant or amenorrhic women whose pregnancy at the time was mistimed i.e. unmet need for spacing or was unwanted i.e. unmet need for limiting, but were not using any method of contraception. He further argues that the measure ignores men whose need can be defined by using information on current contraceptive practice and reproductive preferences. He points out that such a measure for men should exclude the criteria bearing on pregnancy and fecundity.

2.1.2. Studies Outside Kenya

Among studies carried out on women around the world, Janowitz, et al. (1980) used data from a 1978 survey to study the availability of services and the unmet need for contraception among ever married women aged 15-49 years in Sao Paulo State in Brazil. They have noted that “the picture in Sao Paulo is similar to that found in many other developing countries: The unmet need for family planning services is concentrated among women who are poor, rural, uneducated, older and of relatively high parity” (Janowitz, et al. 1980:12). Based on this observation, it is expected that unmet need for contraception should be concentrated among ever married men who are poor, live in rural areas, are uneducated, are older, and have many living children.

Westoff and Pebley (1981) analyzed data from 18 developing countries that participated in the World Fertility Survey (WFS). They identified 11 different measures of unmet need among married women producing estimates of unmet need using all the measures. Unmet need was found to vary according to age, number of children, place of residence and level of education. Unmet need among married men is thus expected to vary according to men’s age, number of living children, place of residence and level of education.

Nortman (1982) adopted a model that attempted to determine the potential contraceptive demand over time and for purposes of spacing and preventing births among women. She used data from the Contraceptive Prevalence Surveys conducted in Bangladesh, Columbia, Costa Rica, the Republic of Korea, Mexico and Thailand. The model classified the women according to their pregnancy desires, contraceptive use and contraceptive need in the year following the survey. Such a model can be adopted for men as suggested by Robey, et al. (1996).

Westoff (1988) developed comparative estimates of unmet need among women and its components for five Latin American countries that participated in the DHS, that is Brazil, Columbia the Dominican Republic, Ecuador and Peru. His finding was that unmet need was disproportionately great in rural areas, among younger women, and among the less educated. Trends in the decline of unmet need in the five countries also showed variations according to age, place of residence and level of education. Unmet need among men is thus expected to be greater in rural areas and among the less educated.

De Graff and de Silva (1991) used data from the 1987 Sri Lanka DHS to study unmet need among women aged 15-49 years in the country. The results indicated that unmet need varied with age, number of CEB, level of education, place of residence, ethnic and religious backgrounds, as well as ever-use of modern contraceptives. It is expected that unmet need among men in the reproductive age group will vary with age, number of living children, place of residence, ethnic background, religious affiliation, and ever use of modern contraceptives.

In another study, De Graff and de Silva (1996) used the 1987 DHS of Sri Lanka to develop a different kind of measurement of unmet need, that is, the health-based approach. The analysis indicated that the health-based methodology captured only 43%-65% of the preference-based unmet need among women exposed to the risk of pregnancy in Sri Lanka. Whereas the standard approach i.e. preference-based methodology identified some of the women with health-based need, it did not fully capture this subset. It is, however, not possible to develop a health-based measure for men since the indicators used such as birth interval, maternal age and birth order do not apply to men.

Robinson and Cleland (1992) noted that the obstacles to the use of contraception among women with unmet need constituted the totality of costs of regulating fertility. They categorized the costs as socio-familial-individual constraints, objective economic and health costs as well as subjective fears, anxieties and other costs. These are the same reasons identified by Westoff (1988) for non-use among women with unmet need of contraception. These costs are expected to serve as reasons for non-use of contraception among men with unmet need as well.

Using data for 11 countries which the DHS collected all the necessary information between 1986 and 1988, Westoff and Moreno (1992) presented estimates of both the level and the composition of unmet need for birth limitation and for spacing among married women. Unmet need was found to vary according to age, education level and place of residence. Variations were also noted in the relative importance of the spacing and limiting components of unmet need among regions. In relation to men, unmet need is expected to vary according to men's age, level of education and place of residence. The nature of the DHS data does not, however, allow for the determination of the limiting and spacing needs for men.

Bongaarts and Bruce (1995) argued that unmet need for contraception among women exists because there is a "cost" associated with practising it. Such a cost refers not only to the expenses of commodities, travel and services, but also to health, psychological, and social considerations associated with contraception. They identified major causes of unmet need as unavailability of FP methods, lack of knowledge, concerns about health, side effects, and behavioural requirements, as well as objections from husbands. The same costs are expected to apply to men with unmet need except for opposition from wives or partners which may be expected to play a

less important role.

Robey, Ross and Bhushan (1996) have observed that reasons for unmet need among women include difficulties with access to and quality of FP supplies and services, health concerns about contraceptive side effects, lack of information, opposition from husbands, families and communities, as well as little perceived risk of pregnancy. Besides, some women give conflicting answers to different survey questions about their fertility preferences, which may reflect ambivalence or uncertainty about childbearing and reproductive intentions. Among men with unmet need, issues to do with perception of the risk of pregnancy and ambivalence about childbearing are not expected to apply. Opposition from wives or partners is expected to play a minor role in the decision to use or not to use contraception especially in the African context.

Women with unmet need are noted to vary with regard to the time since previous birth, age, number of children, level of education, place of residence, pregnancy status, type of unmet need i.e. whether for limiting or spacing, previous use of contraception, and intention to use contraception. They further argue that while there is no generally agreed upon concept of unmet need among men comparable to women, men can be considered to have unmet need if they are sexually active, their partners are fecund and not pregnant, and they do not want their partners to become pregnant, but neither they nor their partners use contraception. Such need is then expected to vary according to men's age, number of living children, level of education, place of residence, previous use of contraception, and intention to use contraception.

Casterline, Perez and Biddlecom (1997) proposed a framework for explaining unmet need for FP and used it to explain the discrepancies between fertility preferences and contraceptive practice

among women in the Philippines. The results indicated that unmet need was not an artifact of survey measurement, and that the following five factors contributed significantly to unmet need: strength of fertility preferences, perceived risk of conceiving, perceived effects of contraception on health, husband's fertility preferences, and husbands' and wives' acceptance of FP. For men with unmet need, it is expected that the need should not be an artifact of survey measurement. Rather, it should be a result of strength of fertility preferences, perceived effects of contraception on health, wife's/ partner's fertility preferences, and the couple's acceptance of FP.

Sharon Stash (1999) used in-depth interviews to study factors explaining the unmet need for contraception among currently married women in Chitwan in Nepal. She found that unmet need among women varied according to parity, ethnicity, level of education and type of occupation. In relation to currently married men, it is expected that unmet need should vary according to the number of living children a man has, his ethnic background, level of education and type of occupation.

Shelton, et al. (1999) noted that analysis of survey data from the Philippines indicated that lack of access to FP services did not contribute to the country's high level of unmet need among women at risk of pregnancy. On the other hand, analysis of survey and qualitative data in Punjab in Pakistan determined that social costs of contraception, such as fear of side effects and spousal, cultural and social acceptance were the decisive obstacles to its use, rather than the monetary and related direct costs of obtaining supplies. These factors are expected to explain non-use of contraception among men with unmet need as well.

As far as studies on men are concerned, Moi-Lee Liow (1996) notes that the major obstacles to men's involvement in family planning include the socio-cultural environment, men's attitudes and beliefs, male bias in policy-making, policy-related obstacles, lack of programmes, provider bias, as well as lack of relevant information.

Wasileh Petro-Nustas (1999) used cross-sectional survey data collected among a convenience sample of 241 men whose wives delivered in three hospitals in Amman, Jordan, in 1996-1997. The finding was that attitude toward birth-spacing and contraceptive use were more positive among men with at least a secondary education and among those with a higher income than among their less-educated and less well-off counterparts. Men also tended to be interested in religious programmes and were concerned about the acceptability of various contraceptive methods within the religious law. These factors have implications on unmet need for contraception among men.

Stan Becker (1999), using the most recent Demographic and Health Survey (DHS) data for Bangladesh, the Dominican Republic and Zambia, introduced the idea of couples' unmet need. Relying on responses regarding fertility desires and intentions to use FP only, the definition of unmet need was taken to refer to the proportion of individuals who wanted to limit or space their births by more than two years, and who intended to use contraceptives within the next 12 months. Couples' unmet need thus referred to the proportion of couples with at least one partner having unmet need for contraception.

In Africa, Westoff and Bankole (1995) analyzed unmet need for contraception among married, never married and formerly married women for 27 countries in which surveys were conducted between 1990 and 1994 of which 14 were from sub-Saharan Africa. Unmet need varied according to age, number of children, prior use of contraception, place of residence and level of education. Reasons for non-use of contraception among women with unmet need included ambivalence about further child-bearing, lack of knowledge about methods, fear of side-effects of contraceptive practice, religious opposition, opposition from partners, sub-fecundity and the supply reasons, that is, availability, cost or inconvenience. For men, unmet need is expected to vary according to the same factors identified in the study. However, issues of sub-fecundity and ambivalence about further childbearing among reasons for non-use of contraception are not expected to apply to men.

Govindasamy and Boadi (2000), writing on a decade of unmet need for contraception in Ghana, noted that unmet need among women varied over time according to age, place of residence, region, education level, number of children a woman had, months since last birth, as well as according to intention to use contraception. Among men with unmet need, the need is expected to vary over time according to most of the factors identified in the study except for months since last birth which does not apply to men.

They also identified four categories of reasons for unmet need that include fertility-related reasons such as infrequent sex, menopause and sub-fecundity or infecundity, method-related reasons such as health concerns and fear of side effects, opposition to use such as by the respondent, husband/partner or religion, and lack of knowledge. For men with unmet need, fertility-related reasons such

as menopause, sub-fecundity or infecundity are not expected to apply.

Within East Africa, Wolff, Blanc and Ssekamatte-Ssebuliba (2000) employed both qualitative and quantitative data, that is, a focus group study and a sample survey to investigate couple dynamics in reproductive decision-making in two districts in Uganda. Their findings were that the impact of couples' agreement on unmet need depended on the proportion of couples with discordant desires to stop childbearing among all those exposed to the risk of pregnancy, and on the difference in contraceptive prevalence between concordant and discordant couples.

2.1.3. Studies in Kenya

Karanja Sammy (1997) analyzed the unmet need for contraception among married women at the time of the survey in Kenya using the 1993 KDHS data. He found that unmet need varied according to the place of residence, level of education, number of children ever born (CEB) and religion. Unmet need among currently married men is also expected to vary according to men's place of residence, level of education, number of living children and religion.

Bankole and Ezeh (1999) used data from six DHS III countries from sub-Saharan Africa including Kenya¹ to develop couple unmet need. They argued that the standard measure of unmet need over-states the prevalence of the phenomenon on two grounds: by the way currently pregnant or amenorrhic women are classified, and by ignoring the role of husbands in reproductive decision-making. Their findings were that unmet need was considerably lower among couples in the countries studied than was indicated by the estimates based on the standard formulation.

Among studies on men, Pierre Ngom (1997) used the Demographic and Health Surveys of Kenya (1989 and 1993) and Ghana (1988 and 1993) to estimate men's unmet need. In the study, a man was considered to have unmet need if he did not want any more children but was not practising contraception. Unmet need by wife's rank was measured as the proportion of husbands who had unmet need for FP with their wife of that particular rank, among all husbands who had at least a particular number of wives interviewed during the survey.

Restricting the definition of the concept of unmet need to modern contraception, the study found that according to the 1993 Ghana DHS, 24.2% of married men who did not want to have more children were not using any modern contraceptive method, while for Kenya it was 23.5% according to the 1993 KDHS. It was also found that both men and women had substantial levels of unmet need, but the potential demand seemed to be slightly lower among men than among women.

Fapohunda and Rutenberg (1999) used qualitative data to study men's participation in RH in Kenya conducting their study in Kakamega District. They found that men's perception of contraception and preferences regarding the number and composition of children accounted for lack of concern by men. These varied according to the place of residence and level of education.

Otieno (2000) used KDHS 1993 to investigate men's knowledge, attitude and practice of FP in Kenya. He found that there was a high level of knowledge (awareness) of FP methods and source coupled with an almost universal approval. However, the reported high knowledge and considerably favourable attitude had not been translated into practice.

2.1.3. Summary of Literature Review

From the foregoing literature review, it is evident that the measurement of unmet need is approached with slight variations from one investigator to another. However, the measures only capture the apparent discrepancy between women's fertility preferences and their behaviour. Very few of such attempts have been made to capture such inconsistency for men, or to integrate the inconsistencies between women and men's fertility preferences and their contraceptive behaviour. It is, however, suggested that this can be done by considering men's current contraceptive practice and their fertility preferences, or by integrating the practices and preferences of their wives or partners as well.

A number of factors are commonly cited as being obstacles to the use of contraception among women who would otherwise wish to do so. These include lack of knowledge of the methods, fear of side effects, lack of access, religious opposition, husband's disapproval, ambivalence about future childbearing and little perceived risk of pregnancy. Most of these reasons are given as reasons for non-use of contraception among men except for ambivalence about future childbearing, perception of the risk of pregnancy, and to a lesser extent, opposition from the wife or partner.

Unmet need is also found to vary according to women's socio-economic and demographic characteristics such as age, level of education, place of residence, number of children ever born, time since the previous birth, religion, region of residence, and previous use of contraception. No attempts have been made to determine whether such variations would hold true for men with the

exclusion of such factors as time since previous birth and CEB which do not apply to men.

2.2. THEORETICAL FRAMEWORK

2.2.1. Conceptual Framework

As evident from the literature review, a number of studies (Robey, et al 1996, Westoff and Bankole 1995, Robinson and Cleland 1992, Casterline et al 1997) have identified factors affecting use and non-use of contraception among women with unmet need. Among the most commonly cited factors are weakly held fertility preferences, little perceived risk of conceiving, lack of knowledge of contraceptive methods, fear of contraceptive side effects, inadequate FP services, perceptions that practising contraception is socially and culturally unacceptable, and opposition from the husband and other community members. It should be expected that most of these factors would account for use or non-use of contraception among men with unmet need as well except for such factors as perception of risk of pregnancy and ambivalence about future childbearing which are not applicable to men.

According to the framework proposed by Casterline, Perez and Biddlecom (1997), unmet need for FP can be a result of two general sets of explanations: it can be an artefact of survey measurement, that is, either fertility preference or contraceptive practice is inaccurately measured, or it can be a result of certain obstacles to the use of contraceptives among women who would otherwise wish to do so. The first set of explanations was beyond the scope of this study. As a result, the focus was on the second set, which was modified to refer to men, and entailed the following conceptual considerations:

- 1) Men with unmet need have weakly held fertility preferences, that is, they are weakly attached to desires for few children.
- 2) Men with unmet need lack necessary knowledge of contraception. •
- 3) High costs of contraception may block the implementation of fertility preferences among men because:
 - a) Men with unmet need are fearful of the side effects of using contraceptives.
 - b) Men with unmet need view contraception as socially and culturally unacceptable.
 - c) Men with unmet need have inadequate FP services.
 - d) The spouse can be an obstacle to the use of contraception among men with unmet need.

Robinson and Cleland (1992) have observed that preferences with respect to the number, sex and timing of children are not independent of knowledge, availability, and cost of regulating fertility. It should therefore be expected that where there are high costs of fertility regulation, insufficient knowledge about methods of regulating fertility, and insufficient services, men are less likely to use contraception even if they may not desire more children. They have also pointed out that under such circumstances, fertility preferences will be weak. It can therefore be expected that men with unmet need are likely to be less attached to desires for few children.

The factors may reflect the deliberate process that men may go through which involves confirming the strength of motivation to practice contraception, existence of appropriate knowledge about contraception, and assessing the magnitude of the various barriers to using a method of contraception.

In any given setting, some of the explanations may account for a larger proportion of unmet need for FP than others. Furthermore, no single explanation predominates, and many couples appear to perceive themselves as confronting two or more of the obstacles (Casterline, et al, 1997). These obstacles can be considered as the intermediate or proximate factors of unmet need, which may vary according to some background characteristics of those with unmet need.

It is therefore expected that the influence of these intermediate or proximate factors on the magnitude and components of unmet need will vary according to men's socio-economic, cultural and demographic characteristics such as age, level of education, place of residence, region of residence, religion, ethnicity, and number of living children.

2.3. DEFINITION OF CONCEPTS

2.3.1. Socio-Economic Factors

The variables considered under this category in this study included the respondent's education level, the place of residence and region of residence:

- a) **Education level** represented the highest level of education attained by the respondent. The categories of education level included in the study were: no education, primary, secondary and above.
- b) **Place of residence** is the place where the respondent was at the time of the interview, and was categorized into rural and urban.
- c) **Region of residence** referred to the province where the respondent was at the time of the interview, and included Nairobi, Central, Coast, Eastern, Nyanza, Rift Valley and Western Provinces that were covered by the 1998 KDHS.

2.3.2. Cultural Factors

Given the limitation of the 1998 KDHS, the main cultural variables captured are religion and ethnicity, which were the variables considered under this category:

- a) **Religion** referred to the religious group to which the respondent belonged at the time of the interview. It was categorised into Catholic, Protestant/ Other Christian and Muslim/ others.
- b) **Ethnicity** referred to the ethnic group of the respondent and was categorised into Kalenjin, Kamba, Kikuyu, Kisii, Luhya, Luo, Meru/ Embu, and other.

2.3.3. Demographic Factors

Age is the first demographic variable in the study. It is the number of complete years lived by the respondent and was grouped into five-year age groups.

Respondents were also asked about the **number of living children** they had ever had that were biologically theirs. Though the reliability of answers to such a question is questionable, it was considered as another demographic factor. It was categorized into less than 4 children, 4 to 7, and 8 and above.

2.3.4. Proximate Determinants of Unmet Need

These are the intervening variables through which the background factors act to influence unmet need. They are the immediate reasons given by respondents with unmet need for not using any method of contraception.

For this study, the framework proposed by Casterline, et al, (1997) was adopted and modified to include the following variables:

- a) **Fertility preference** referred to the expressed desires for additional children by the respondent. It was measured by the desire for more children.
- b) **Lack of knowledge** referred to whether the respondent reported knowledge of at least any modern method of contraception. It was measured by the number of methods known-spontaneous.
- c) **Fear of side effects** together with social and cultural unacceptability of contraception referred to the attitude of the respondent toward contraception. It was measured by the perception of the respondent toward FP.
- d) **Spousal influence** referred to the role of the spouse through spousal communication in contraceptive use or non-use. It was measured by discussion of FP with spouse.

2.3.5. Magnitude and Components of Unmet Need

The magnitude of unmet need was the final proportion of non-users of modern methods of contraception among married men at the time of the survey according to the definition of unmet need as given below.

Components of unmet need referred to the proportion at each separate level into which men with unmet need for contraception were separated.

2.3.6. Unmet Need for Contraception

This referred to the proportion of married men who were not using any modern method of contraception at the time of the survey, but who desired no more children then.

2.4. OPERATIONAL FRAMEWORK

Age determines exposure to marriage and sexual intercourse. It is therefore expected that as age advances and sexual activity becomes frequent, unmet need should also increase until such a time that sexual activity diminishes when it should also diminish. This is because increased exposure to sexual activity increases the risk of men making their wives or partners pregnant without intention.

Education is expected to improve men's knowledge, attitude and practice of contraception. Higher education is likely to enable men to understand their reproductive health needs better, efficiently use available contraceptives, be aware of the side effects of contraceptives, and know where to get them. Education further enhances spousal communication. Couples with higher education are more likely to engage in discussions on the number of children they should have and on whether to use contraception or not. Higher education levels are therefore associated with greater contraceptive use; hence lower levels of unmet need.

Men in urban areas have easier access to contraceptive methods given the infrastructural facilities in place in these areas. They are also likely to be knowledgeable about contraceptive methods and the side effects since they are likely to be more educated than those in the rural areas. Furthermore, the cost of raising children in an urban environment is high. This may make

couples in an urban setting to desire few children. They are therefore expected to use more contraception than their rural counterparts who are faced with limited information about the methods and poor quality of services.

Regional variations in contraceptive prevalence may reflect cross-cultural differences between the ethnic groups or it may reflect the differences in service availability and accessibility. It is therefore expected that regions with widely available services should show low levels of unmet need since psychological, time and monetary costs may have little impact on contraceptive use.

As the number of children men report to be biologically theirs increases, unmet need for contraception is expected to rise. This is because it will show the inability of men to implement their fertility preferences in the face of the prevailing contraceptive practice. It is more likely that in such a situation, the number of living children may be more than the desired family size.

Certain religious groups such as Catholics are opposed to modern methods of contraception and advocate for natural methods. They are therefore expected to experience a low level of use of modern contraception, hence a higher level of unmet need.

Ethnic groups whose cultural practices still promote values that favour many children may view contraception as socially and culturally unacceptable. They are therefore expected to show low levels of contraceptive use; hence higher levels of unmet need.

2.4.1. Study Hypotheses

Based on the above conceptual considerations, the following hypotheses were thus investigated:

- 1) Men who desire more children have higher levels of unmet need than those who want no more children.
- 2) Men who know few modern methods of contraception have higher levels of unmet need than those know more of such methods.
- 3) Men who approve of modern methods of contraception have lower levels of unmet need than those who do not approve.
- 4) Men who discuss FP more often with their partners have lower levels of unmet need than those who never discuss.
- 5) Unmet need for contraception varies according to men's age, level of education, place of residence, region of residence, religion, ethnicity and number of living children.

2.5. LIST OF VARIABLES

The following variables were specifically considered for the study:

2.5.1. Independent Variables

These were regarded as the control variables, and were measured as follows:

- a) Age- in five-year age groups.
- b) Education- no education, primary, secondary and above.
- c) Place of residence- rural and urban residence.
- d) Region of residence- Nairobi, Central, Coast, Eastern, Nyanza, Rift Valley and Western.
- e) Religion- Catholic, Protestant/ Other Christians, Muslims/ others.

f) Ethnicity- Kalenjin, Kamba, Kikuyu, Kisii, Luhya, Luo, Meru/ Embu, other.

g) Number of living children- less than 4, 4 to 7, 8 and above.

2.5.2. Intermediate (Proximate) Variables

These were the variables to be investigated or the study variables and were measured as follows:

- a) Fertility preference- desire for more children: then, later or not at all.
- b) Lack of knowledge- number of methods known- spontaneous: less than 3, 3 to 5, 6 and above.
- c) Attitude toward FP- perception of contraception: approves. disapproves, no opinion.
- d) Spousal communication- discussion of FP with partner: never, once or twice, more often.

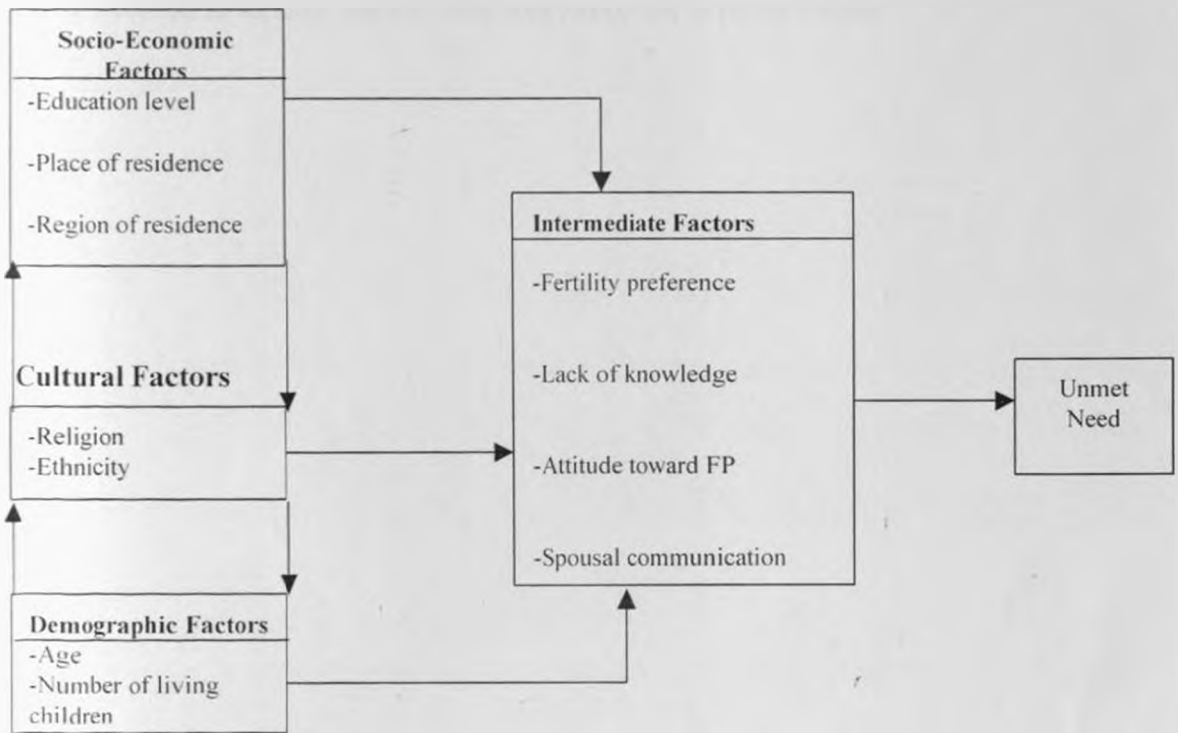
2.5.3. Dependent Variable

- Unmet need.

2.5. OPERATIONAL MODEL

From the above specification of study variables, the following operational model was thus drawn to explain unmet need for contraception among men:

Figure 2.1: Operational Model for Explaining Unmet Need



Source: Developed from the framework by Casterline, et al, (1997)

Figure 2.1 shows the operational model that can be drawn to show the relationship between men's unmet need and their social, economic, cultural and demographic characteristics. It shows that unmet need for contraception among men is a result of such factors as weak fertility preference, lack of knowledge, attitude toward FP and spousal agreement on whether to use contraception or not. These factors in turn vary according to men's age, number of living children they have, religion, ethnicity, region of residence, place of residence, and education level.

The arrows between the independent variables, on the other hand, indicate that there could be some kind of association between these factors which might not necessarily be causal relationships. For example, as it was later found out in the analysis, there was high correlation between ethnicity and

region of residence. As such, their inclusion in the same model rendered region insignificant while when they were run in separate models, they both turned out to be significant.

Other countries included in the study are Central African Republic, Ghana, Mali, Uganda and Zimbabwe.

CHAPTER THREE

METHODOLOGY

This chapter covers the source of data used in this study, that is, the 1998 Kenya Demographic and Health Survey male survey data, the survey design, the sampling procedures used to collect the data, the nature of the questionnaires, and the quality of the data. It also covers a description of the methods of data analysis used that include the current status model used to determine the magnitude of unmet need, cross-tabulation and the Chi-square used to analyze the relationship between unmet need and each of the independent and intermediate factors, and the multivariate logistic regression analysis used to analyze the determinants of unmet need for contraception among married men.

3.1. METHODS OF DATA COLLECTION

3.1.1. Source of Data

The 1998 Kenya Demographic and Health Survey (KDHS) male survey data was used in the study. The data provide information on fertility preferences, nuptiality, awareness and use of FP methods as well as knowledge and behaviours related to HIV/AIDS and other sexually transmitted infections. This is in addition to information on the individual's background characteristics such as age, education level, religious affiliation and occupation.

3.1.2. Survey Design

The 1998 KDHS was national in scope though all the districts in North Eastern Province were excluded together with four other districts, that is, Samburu and Turkana in Rift Valley Province, and Isiolo and Marsabit in Eastern Province.

A two-stage stratified sample consisting of 536 selected sample units (clusters) was utilized. From the lists of households, a systematic sample of households was drawn, that is, 22 households per urban cluster and 17 per rural cluster. From the total number of households identified, every second household was included in the male sample in which all men aged 15-54 years were eligible for interview.

There was over-sampling in 15 rural districts besides Nairobi and Mombasa because it was felt that reliable estimates for certain variables could be produced for them. This was because since the number of districts had increased, it could not be possible to produce reliable estimates for all the districts without running the risk of expanding the sample to unmanageable size.

3.1.3. Sampling

A total of 9465 households were selected of which 4747 households were sub-sampled for inclusion in the KDHS male survey. Out of these, 4337 households were occupied and therefore eligible for interview. About 97% of these households were successfully interviewed. A total of 3845 men (age 15-54) were identified in the surveyed households and 3407 of these were interviewed yielding a response of 89%.

The response rates for individual interviews were higher in rural than in urban areas. The main reason for non-response was failure to find the individuals despite repeated visits to the household and place of work.

3.1.4. Questionnaires

Three types of questionnaires were used in the 1998 KDHS, that is, the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. The Household Questionnaire was used to list all the usual members and visitors in the selected households giving basic information on each person and the household characteristics. The Men's Questionnaire excluded the detailed reproductive history and sections dealing with maternal and child health, maternal mortality and female circumcision included in the Women's Questionnaire. The set of English language questionnaires were translated into Kiswahili and nine of the most widely spoken local languages.

3.1.5. Data Quality

To minimize on non-sampling errors, the questionnaires were pre-tested and revisions made in the wording and translation based on the pre-test. The interviewers were given a three-week training course. Funds were provided by the United States Agency for International (USAID) and the British Department For International Development (DFID). Logistical assistance was provided by the United Nations Population Fund (UNFPA), the Division of Primary Health Care (DPHC) and the National AIDS Control Programme.

However, given that over-sampling was done for some districts, the KDHS sample was not self-weighting at the national level. As such, sample weights were used to compensate for the unequal probability of selection between geographically defined strata. The fact that some districts were left out and the problem of non-response could also affect the quality of data.

3.2. METHODS OF DATA ANALYSIS

3.2.1. Estimation of the Magnitude of Unmet Need

The model used to determine the magnitude of unmet need for contraception among men is the current status model that helps to determine unmet need from the respondents' contraceptive behaviour and fertility preferences at the time of the survey. It involved identifying the various components of unmet need according to the definition adopted in this study. The first step was to divide the number of married men at the time of the survey into two components: users and non-users of modern methods of contraception. The next step was to further divide the second component into a number of components from which the final magnitude of unmet need was determined.

3.2.2. Bivariate Analysis: Cross-tabulation and the Chi-square

Bivariate analysis involves analysis of two variables of interest. These can be a dependent and an independent variable or two independent variables. The concern is to determine whether there is any relationship between the variables or to determine the effect of the independent variable on the dependent variable.

If the concern is to determine whether there is any relationship, then interest is on the direction or magnitude of the relationship. If, on the other hand, the concern is to determine effect, then interest is to find out the predictive value of the independent variable on the dependent variable.

(i) Cross-tabulation

Cross-tabulation is a form of contingency distribution in which two nominal-scale variables are cross-classified. Cross-tabs show the frequency distributions according to each category of the two variables of interest; hence they are useful in comparative analysis. Cross-tabulation with chi-square is one of the quantitative methods used to analyze the relationship between two variables.

(ii) The Chi-square Test

According to Blalock (1979), the chi-square test is a general test that can be used to evaluate whether or not frequencies which have been empirically obtained differ significantly from those which would be expected under a certain set of theoretical assumptions. The chi-square statistic is denoted χ^2 .

One of the applications of the chi-square test is to test for the differences between observed and expected frequencies. The expectation must be based on theory or model, and the hypothesis to be tested is:

H_0 : There is no significant difference between the observed and expected frequencies;

H_1 : There is significant difference between observed and expected frequencies;

where H_0 is the null hypothesis to be tested and H_1 is the alternative.

If the difference between the expected and the observed frequencies is not significant, then the theory or model can be said to be fairly good. This means that χ^2 is a test of the goodness of fit of

a model, that is, whether the model fits the data.

Another use of the χ^2 statistic, which is applied in this study, is to test for the significance of association between two variables. This is mainly when the variables are in the form of a contingency table, and the hypothesis to be tested is:

H_0 : There is no significant association between X_1 and X_2 ;

H_1 : There is significant association between X_1 and X_2 ;

where X_1 is an independent variable, and X_2 can be another independent variable or the dependent variable. In this case, the chi-square test will give the probability value (p-value) by which the observed values deviate from the expected values; hence testing for the hypothesis that the two variables cross-tabulated are independent of each other.

If the p-value is less than a given alpha value such as 0.01 or 0.05, then there is a statistically significant association between the two variables. H_0 is therefore rejected, and by implication, H_1 is accepted.

If, on the other hand, the p-value is greater than the given alpha value, then there is no significant association between the two variables. H_0 is thus accepted.

The χ^2 statistic is computed as follows:

$$\chi^2 = \sum \frac{(O-E)^2}{E} \dots 1$$

where E is the expected frequency for a cell. O is the observed frequency for the cell, and \sum is the (Greek sigma) sum.

The χ^2 test assumes that the observations are independent of each other; that the variables are categorical; that the data must have been drawn from the targeted population; that the sample contains at least 50 observations; and that there are no less than 5 observations in any cell.

The major limitation of the χ^2 statistic is that it only indicates the existence of a relationship and whether it is significant or not, but it does not give the direction and effect of the relationship between two variables of interest.

3.2.3. Multivariate Logistic Regression Analysis

The purpose of multivariate regression analysis is to be able to predict the outcome (dependent) variable using a number of independent variables. The use of logistic regression analysis arises from the fact that the dependent variable is dichotomous such as is the case in this study and can only take either of the two values, that is either 0 or 1.

(i) The Logistic Regression Model

The logistic regression model is specified as:

$$p_x = 1 / \{1 + \text{Exp}(-(\beta_0 + \beta_1 X_1 + \dots + \beta_p X_p))\} \dots 1$$

The above equation implies that the probability, p_x , of the occurrence of the dependent variable depends on the independent variables X_1, X_2, \dots, X_p . For the present study, therefore, it gives the probability of an individual with characteristics X_1, X_2, \dots, X_p having unmet need for contraception.

If a logit transformation is applied on the logistic model, it is transformed into the linear form of the ordinary least square (OLS) model. Equation 1 above would therefore be transformed into equation 2 below, that is:

$$\ln p_x/q_x = \beta_0 + \beta_1 X_1 + \dots + \beta_p X_p \dots 2$$

where $q_x = 1 - p_x$ and it refers to the probability of not observing the event, that is, of not having unmet need while $\ln p_x/q_x$ is the logit of p_x .

The estimation of the regression coefficients in a logistic regression is accomplished through the maximum likelihood method. The method is based on trying to maximize the possibilities of observing the data provided by the logistic distribution. It uses the iteration process, which involves various steps of trying to determine the best way of mapping the distribution on the actual data.

The point of convergence where the outcome does not change even with further slight variations gives the likelihood function, L . Since there is an element of an exponential, the log of L is obtained to give the log likelihood, LL .

(ii) Interpretation of Logistic Regression Parameters

The interpretation of the regression parameters is done in two ways. They can be interpreted in terms of logits where a unit change in the independent variable X_1 changes the logit of the dependent variable ($\ln p_x/q_x$) by the amount $\hat{\beta}_1$.

The alternative form of interpretation is in terms of the odds of an event occurring which is computed as:

$$\begin{aligned} \text{Odds(event)} &= (\text{Probability of event}) / (\text{Probability of no event}) \\ &= \text{Exp}(\beta_0 + \beta_1 X_1 + \dots + \beta_p X_p) \dots 3 \end{aligned}$$

where β_i is the factor by which the odds change when the i th independent variable changes by one unit. If β_i is positive, this factor will be greater than one, which means that the odds are increased. If β_i is negative, the factor will be less than one, and if β_i is zero, the factor equals to one and leaves the odds unchanged. In this study, the interpretation of the parameters of β_i is done in terms of the odds ratios ($\text{Exp. } \beta_i$). The interpretation of the value of this ratio for any category is done in relation to the reference category.

Just as in OLS, the student t-test is used to test for the significance of the regression parameters. However, to test for the significance of the overall model, a log likelihood ratio test, the G statistic is used. The statistic is computed as:

$$G = 2[(LL) - (n_1 \ln n_1 + n_0 \ln n_0 - n \ln n)] \dots 4$$

where LL is log likelihood.

n_1 is the number of observations where dependent variable is 1.

n_0 is the number of observations where dependent variable is 0.

n is the total number of observations.

\ln is the natural logarithm.

The value of this statistic is equivalent to the value of χ^2 (chi-square) statistic with degrees of freedom being equal to the number of independent variables in the equation.

(iii) Assumptions and Weaknesses of the Regression Model

The logistic regression model assumes that the dependent variable follows a binomial distribution i.e. that the event has either occurred or not occurred. As such, the observations are concentrated either in zero i.e. the probability of not observing the event or in one i.e. the probability of observing the event. It also assumes absence of multi-collinearity among the independent variables.

Unlike in the OLS model, it is difficult to determine the explanatory power of the logistic regression model. In other words, whereas it is possible to determine what percentage of the observed variations an OLS model explains by computing the coefficient of determination, R^2 , this is not possible with the logistic regression model. Furthermore, as the number of observations becomes large i.e. for large samples, most logistic models tend to be significant.

CHAPTER FOUR

CHARACTERISTICS OF RESPONDENTS WITH UNMET NEED AND THE MAGNITUDE OF THE NEED

4.1. INTRODUCTION

This chapter has two main parts. In the first part, the frequency distribution of men with unmet need for contraception is presented according to the various background and intermediate characteristics. In the second part, the magnitude of the unmet need for contraception among men is calculated using the model described in Chapter Three. Men with unmet need were defined as those who were married at the time of the survey, were not using any modern method of contraception then, but indicated that they wanted no more children.

To get the characteristics of such men, a frequency distribution of the background and intermediate variables was run. The resulting output gave the distribution of men with unmet need by the various characteristics such as age, level of education, place of residence and region of residence. To determine the magnitude of unmet need, calculations were done of the proportion of married men who were non-users of modern methods of contraception at the time of the survey, but who desired no more children.

4.2. CHARACTERISTICS OF RESPONDENTS WITH UNMET NEED FOR CONTRACEPTION

4.2.1. Socio-Economic Characteristics

The socio-economic factors considered in the study include the respondents' level of education, place of residence and region of residence. Interestingly, the highest percentage of men with

unmet need for contraception has primary level education. They constitute 65.4 percent of all men with unmet need, a level that is higher than the proportion with no education of 12.1 percent. As expected, the lowest percentage of men with unmet need have higher education and they make up 0.8 percent of these men.

As far as the place of residence is concerned, 86.6 percent of men with unmet need for contraception are found in the rural areas. The urban areas account for the remaining 13.4 percent. This conforms well to the general expectation that unmet need for contraception is higher in the rural than in the urban areas.

Approximately twenty eight percent of men with unmet need for contraception are found in Rift Valley province, which also accounts for the highest percentage. This is followed by Eastern Province with 18.6 percent of the men while Central province, a region with one of the highest contraceptive prevalence rates in the country¹, comes third with 15.0 percent of the men. Nairobi province has the lowest percentage of men with unmet need of 6.6 percent.

4.2.2. Cultural Background

The cultural variables considered in the study are religion and ethnicity. Distribution according to religion shows that 50.1 percent of men with unmet need for contraception are Protestants and other Christians, and contrary to expectations, they also make up the highest percentage of the men. Catholics come second making up 42.5 percent while the lowest percentage of men with unmet need are Muslims who account for 1.3 percent.

According to ethnic distribution, 20.2 percent of men with unmet need are Kikuyus who also make the highest percentage. They are followed by Luhyas who account for 16.8 percent, then the Kalenjins who account for 16.5 percent, and Kambas who make up 14.4 percent. The lowest percentage of 2.1 percent of men with unmet need are Mijikenda/ Swahili, and another 2.1 percent belong to “other” category.

Besides, the distribution of men with unmet need according to the type of marriage shows that 87.1 percent are in monogamous unions. The remaining 12.9 percent reported being in polygynous unions.

4.2.3. Demographic Characteristics

As expected, the percentage of men with unmet need for contraception rises with increasing age. 0.8 percent of these men are in the age group 20-24 years, which rises to a peak of 22.3 percent in the age group 45-49 before dropping to 18.6 percent in the age group 50-54 years.

The original number of living children variable was recoded into three categories. The first two categories were given in the interval of four comprising the categories less than 4 and 4 to 7, while the last category was given as an open interval of 8 children and above. This was done after running a frequency of the original variable with the mean, the median and the standard deviation, which came out as 4.7, 4.0 and 3.9 respectively. The recoded variable was based on this distribution.

The frequency distribution of the recoded variable shows that the highest percentage of men with unmet need had 4 to 7 living children. They make up 52.0 percent of these men, while the lowest percentage of 13.6 percent had less than 4 living children. Those who had 8 and above living children constituted 34.4 percent.

4.2.4. Knowledge, Attitude and Practice Characteristics

The distribution according to knowledge of modern methods of contraception shows that 97.6 percent of men with unmet need reported knowledge of such methods. The remaining percentage of 2.4 percent reported no knowledge of such methods.

If the number of methods known is computed and considered, the distribution shows that 19.9 percent of men with unmet need spontaneously know two methods and another 19.9 percent spontaneously know three methods. The distribution further shows that 16.5 percent spontaneously know one method and 15.0 percent spontaneously know four methods. The lowest percentage of 0.3 percent spontaneously knows seven methods, another 0.3 percent spontaneously knows nine methods, and another 0.3 percent spontaneously knows ten methods.

When the number of methods known is probed, the distribution changes significantly. The highest percentage of 21.5 percent of men with unmet need know four methods, 17.6 percent know five methods, 13.9 percent know three methods, and 12.3 percent know six methods. The lowest percentage of 0.5 percent knows ten methods.

If the methods are categorized into less than three methods, three to five methods, and six or more methods, the distribution shows that for the number of methods known spontaneously, the highest percentage of men with unmet need knew less than three methods. They represent 48.8 percent of the men while the lowest percentage of 8.7 percent knew six or more methods. This conforms well to expectations since it should be expected that unmet need is higher among those who know few than among those who know more methods.

However, the distribution changes when the categorized number of methods known is probed. It shows that the highest percentage of 53.0 percent of men with unmet need knew between three to five methods. Nevertheless, the lowest percentage of 22.8 percent still remains those who knew six or more methods.

Ninety one percent of men with unmet need for contraception approve of family planning (FP) while the remaining 9.0 percent disapprove. This is contrary to expectation since those who disapprove of FP are less likely to use contraception; hence are more likely to have unmet need.

The distribution of men with unmet need according to ever use of any method of contraception shows that 34.1 percent had never used any method. If ever use of a modern method of contraception is considered, this percentage increases to 73.9 percent leaving only 26.1 percent as having used such methods.

Contrary to expectations, more men with unmet for contraception reported discussing FP with their partners more often. They make up 43.7 percent of these men, while the least number of

men with unmet need accounting for 23.7 percent reported discussing FP with their partners once or twice. The number of those who had never discussed FP with their partners still remains significant, though, and accounts for 32.6 percent of these men.

The highest percentage of men with unmet need does not intend to use a method in future. They constitute 43.1 percent of the men while the lowest percentage of 6.6 percent intends to use a method later, and another 6.6 percent are unsure about future use.

Among men with unmet need, the majority cited menopause as the main reason for not intending to use a method. They constitute 53.8 percent of these men. The distribution according to other reasons given for not intending to use a method in future are as follows: 7.7 percent indicated that they wanted more children, 6.6 percent cited difficulties in their wives getting pregnant, another 6.6 percent cited religious prohibitions, 5.5 percent mentioned lack of knowledge of the methods, while 2.2 percent indicated health concerns.

Table 4.1 gives the distribution of men with unmet need for contraception by the various characteristics. This is compared with the distribution of men with met need where met need is defined as married men who were using modern methods of contraception at the time of the survey.

Table 4.1. Distribution of Men With Unmet Need by Various Characteristics

Characteristic	Percent With Unmet Need	Percent With Met Need
Age		
20-24	0.8 (3)	3.6 (19)
25-29	4.5 (17)	15.3 (97)
30-34	13.6 (52)	24.2 (127)
35-39	18.4 (70)	17.0 (89)
40-44	21.8 (83)	20.4 (107)
45-49	22.3 (85)	11.6 (146)
50-54	18.6 (71)	7.8 (41)
Education Level		
No education	12.1 (46)	4.4 (23)
Primary	65.4 (249)	47.3 (248)
Secondary	21.8 (83)	44.3 (232)
Higher	0.8 (3)	4.0 (21)
Place of Residence		
Urban	13.4 (51)	24.6 (129)
Rural	86.6 (330)	75.4 (395)
Region of Residence		
Nairobi	6.6 (25)	8.4 (44)
Central	15.0 (57)	18.1 (95)
Coast	8.4 (32)	10.3 (54)
Eastern	18.6 (71)	19.1 (100)
Nyanza	13.1 (50)	9.0 (47)
Rift Valley	28.3 (108)	23.1 (121)
Western	10.0 (38)	12.0 (63)

Table 4.1. Continued

Characteristic	Percent With Unmet Need	Percent With Met Need
Religion		
Catholic	42.5 (162)	32.3 (169)
Prot/otherXtian	50.1 (191)	59.7 (312)
Muslim	1.3 (5)	3.6 (19)
No Religion	6.0 (23)	2.9 (38)
Ethnicity		
Kalenjin	16.5 (63)	12.2 (64)
Kamba	14.4 (55)	7.1 (37)
Kikuyu	20.2 (77)	27.1 (142)
Kisii	7.6 (29)	8.2 (43)
Luhya	16.8 (64)	15.3 (80)
Luo	9.4 (36)	6.9 (36)
Meru/ Embu	7.9 (30)	15.1 (79)
Mijikenda/ Swahili	2.1 (8)	3.1 (16)
Taita/ Taveta	2.9 (11)	2.3 (12)
Other	2.1 (8)	2.7 (14)
Number of Living Children		
<4	13.6 (52)	41.2 (216)
4-7	52.0 (198)	44.3 (232)
8+	34.4 (131)	14.5 (76)
Knowledge of Any Method		
No method	2.1 (8)	
Only traditional	0.3 (1)	
Modern method	97.6 (372)	
Number of Methods Known- Spontaneous		
0	12.3 (47)	2.3 (12)
1	16.5 (63)	5.2 (27)
2	19.9 (76)	14.3 (75)
3	19.9 (76)	27.1 (142)
4	15.0 (57)	17.9 (19)
5	7.6 (29)	14.7 (77)
6	6.3 (24)	9.0 (47)
7	0.3 (1)	3.6 (19)
8	1.6 (6)	1.7 (9)
9	0.3 (1)	2.1 (11)
10	0.3 (1)	1.9 (10)

Table 4.1. Continued

Characteristic	Percent With Unmet Need	Percent With Met Need
Number of Methods Known- Spontaneous (Grouped)		
<3	48.8 (186)	21.8 (114)
3-5	42.5 (162)	59.7 (313)
6+	8.7 (33)	18.5 (97)
Number of Methods Known- Probed		
0	5.8 (22)	6.5 (34)
1	6.6 (25)	6.5 (34)
2	11.8 (45)	12.4 (65)
3	13.9 (53)	21.0 (110)
4	21.5 (82)	20.8 (109)
5	17.6 (67)	16.8 (88)
6	12.3 (47)	9.4 (49)
7	6.6 (25)	4.4 (23)
8	2.6 (10)	1.7 (9)
9	0.8 (3)	0.4 (2)
10	0.5 (2)	0.2 (1)
Number of Methods Known- Probed (Grouped)		
<3	24.1 (92)	25.4 (133)
3-5	53.0 (202)	58.6 (307)
6+	22.8 (87)	16.0 (84)
Ever Use of Any Method		
Never used	34.1 (130)	
Only folkloric	3.1 (12)	
Only traditional	36.7 (140)	
Modern method	26.1 (99)	
Intention to Use		
In next 12 months	39.3 (83)	
Later	6.6 (14)	
Unsure about timing	4.3 (9)	
Unsure about use	6.6 (14)	
Does not intend	43.1 (91)	

Table 4.1. Continued

Characteristic	Percent With Unmet Need	Percent With Met Need
Main Reason not to Use a Method		
Menopausal	53.8 (49)	
Wants more children	7.7 (7)	
Difficult to get pregnant	6.6 (6)	
Respondent opposed	2.2 (2)	
Partner opposed	3.3 (3)	
Religious prohibition	6.6 (6)	
Lack of knowledge	5.5 (5)	
Health / side effects	3.3 (3)	
Respondent Approves FP		
Disapproves	9.0 (34)	0.6 (3)
Approves	91.0 (344)	99.4 (517)
Discussed FP With Partner		
Never	32.6 (124)	13.2 (69)
Once or twice	23.7 (90)	13.4 (70)
More often	43.7 (166)	73.4 (383)
Type of Marriage		
Monogamous	87.1 (332)	92.7 (486)
Polygamous	12.9 (49)	7.3 (38)

Figures in parentheses are absolute frequencies.

Source: Computed from KDHS 1998 male survey data.

From Table 4.1, it is evident that some of the distributions of men with unmet need compared with those with met need conform to expectations. For instance, it is clear from the table that the highest percentage of men with met need, that is, 73.4 percent discuss FP with their partners more often, and most of them, that is, 99.4 percent approve of FP. Furthermore, if the number of contraceptive methods known spontaneously is considered, it is found that the number of men with unmet need who know no methods, that is, 12.3 percent is higher than the number of men with met need who also know no methods, that is, 2.3 percent.

However, the distribution does not hold true for some of the characteristics. For example, it should be expected that since urban areas have the lowest percentage of men with unmet need, they should have the highest percentage of men with met need. This, however, does not hold true according to the table. Similarly, Nairobi province which has the lowest percentage of men with unmet need, that is, 6.6 percent, also has the lowest percentage of men with met need, that is, 8.4 percent.

4.3. MAGNITUDE OF MEN'S UNMET NEED FOR CONTRACEPTION

The magnitude of unmet need for contraception among married men was calculated using the current status model shown in Figure 4.1. From the KDHS 1998, the number of men who were married at the time of the survey was determined. This represented the total number of men from which the number with unmet need was determined, and thus represented the total percentage of men to be considered, that is, 100.0 percent.

The number of currently married men was then split into two components: those who were using modern methods of contraception at the time of the survey, and those who were not using such methods. The first component represented 32.0 percent of currently married men while the second component made up 68.0 percent of currently married men. The first component was excluded from among those with unmet need because, since they were already users of modern methods of contraception, their need was assumed to be met.

The remaining component of non-users of modern methods of contraception was then split into a number of components. The first component consisted of those who indicated that they wanted more children at the time of the survey. They represented 37.2 percent of currently married men

who were non-users of the methods. They were also excluded from among those with unmet need because, since they desired more children, they were assumed to have no need of contraception.

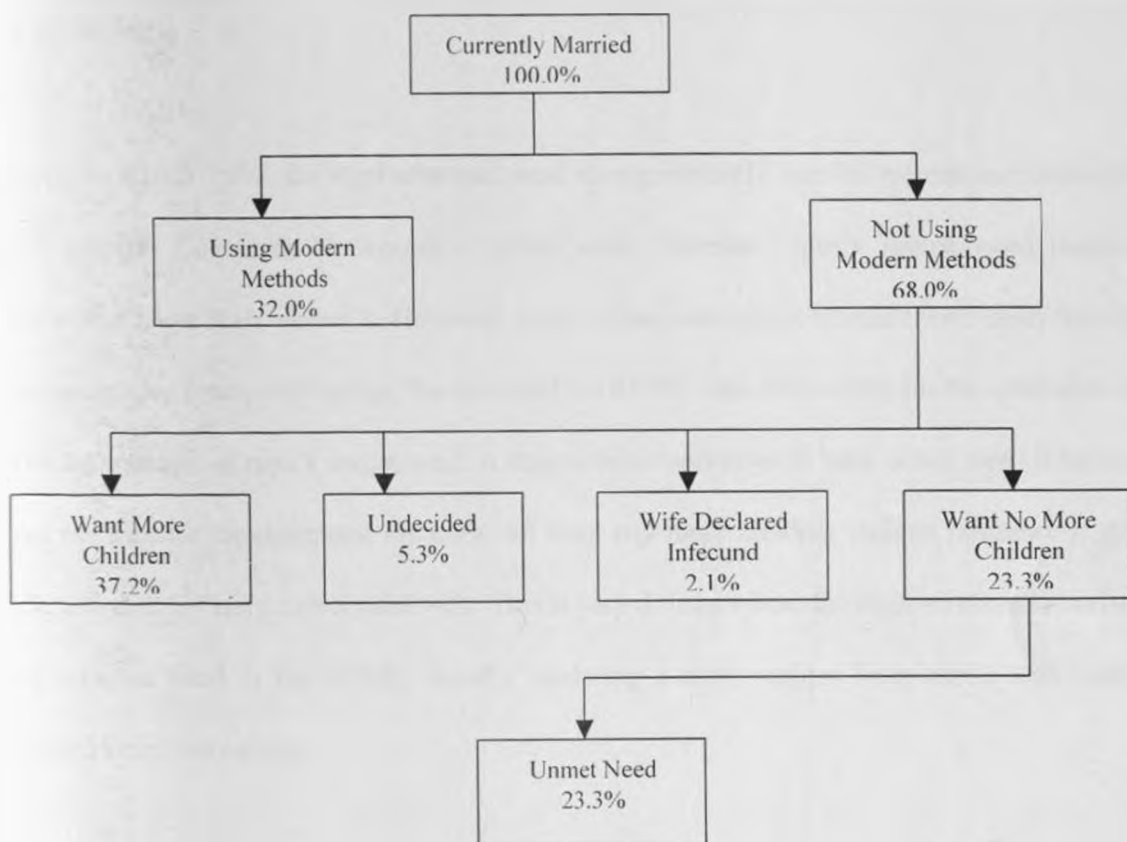
The second component of non-users of modern methods of contraception consisted of those who were undecided about their future fertility intentions. They made up 5.3 percent of currently married men who were non-users. This group was also excluded from among those with unmet need since it was difficult to determine whether they would desire more children (in which case they are totally excluded from among those with unmet need) or they would desire no more children (in which case they are to be included among those with unmet need).

The third component consisted of those whose wives were declared infecund. They represented 2.1 percent of currently married men who were non-users of modern methods of contraception at the time of the survey. Just like the first two groups, this group was also excluded from among those with unmet need. Since their wives were no longer at risk of getting pregnant, they were assumed to be in no need of contraception.

The last component of non-users of modern methods of contraception consisted of those who indicated that they wanted no more children. They made up 23.3 percent of currently married men who were non-users. This is the group that is considered to have unmet need for contraception. Since they are married (in which case sexual activity is assumed) and they desire no more children, yet they are not using any modern methods of contraception, they are considered to be at risk of having more children against their desires. The overall procedure is

summarized in Figure 4.1.

Figure 4.1. Proportion of Currently Married Men With Unmet Need for Contraception



Source: Computed from KDHS 1998 male survey data.

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From Figure 4.1, it is evident that the level of men's unmet need for contraception stands at 23.3 percent according to the estimates from KDHS 1998. This level can be compared by the estimates made by Ngom (1997) from KDHS 1989 and 1993, which stood at 32.1 percent and 23.5 percent respectively, since the same definition of unmet need has been applied.

The trend shows that the level of unmet need among men has been declining. It declined by 8.6 percentage points between 1989 and 1993, by 0.2 percentage points between 1993 and 1998, and

by 8.8 percentage points between 1989 and 1998. However, whether the decline is the genuine result of rising contraceptive prevalence rates or an artefact of measurement issues is beyond the scope of this study.

According to KDHS 1998, the level of unmet need among currently married women was estimated at 24.0 percent. Compared to women's unmet need, therefore, men's unmet need remains significant but lower than women's. However, such comparison cannot be made with exact finality. This is because, as mentioned earlier, the nature of the KDHS data allows only for the estimation of a KAP-Gap measure of men's unmet need. A man is thus considered to have unmet need if he says he does not practice contraception but does not want any more children without reference to any specific wife he may have unmet need with. This is very different from the algorithm used to define women's unmet need in the KDHS, thereby rendering a more serious comparison with men's unmet need rather unrealistic.

46.8 percent of men in Central province reported using a modern method of contraception according to the KDHS 1998, a level which was even higher than Nairobi's 37.0 percent.

CHAPTER FIVE

DETERMINANTS OF UNMET NEED FOR CONTRACEPTION AMONG MEN

5.1. INTRODUCTION

This Chapter is also presented in two major parts. The first part deals with descriptive presentation of the data mainly involving cross-tabulation and the Chi-square. The objective is to determine whether any significant association exists between each of the independent and intermediate factors and the dependent variable unmet need for contraception. The second part of this chapter presents the results of the logistic regression analysis. The main objective is to determine the effect of a given factor on the probability of a man with that attribute having unmet need for contraception. It also deals with whether such effect is significant or not at a given confidence level.

The dependent variable, unmet need for contraception, is a dichotomous variable which was given a value of 1 if the man had unmet need and a value of 0 if the man had no unmet need. The second category consisted of those whose need was assumed to be met because they were already using modern methods of contraception at the time of the survey. It also consisted of those who were assumed to have no need because they desired more children then.

Three models were run. The first model involved running the background factors with the dependent variable unmet need. These included age, education level, place of residence, region of residence, number of living children, ethnicity and religion with unmet need for contraception. The second model involved running the intermediate factors number of methods known- spontaneous, discussion of FP with partner and respondents' approval of FP with the dependent variable.

In the third and final model, selected independent and intermediate factors were run with the dependent variable. Region was left out in the final model because its behaviour depended on whether ethnicity was included in the model indicating the existence of high correlation between these two factors. When this was the case as shown in Table 1 in Appendix 1, region ceased to be significant. When ethnicity was excluded from the model as shown in Table 2 in Appendix 2, region turned out to be significant at 95 percent confidence level. On the other hand, whether ethnicity was run in a model with or without region, it remained statistically significant at 99 percent confidence level showing that it is one of the strongest factors determining unmet need for contraception among men.

Among the intermediate factors, respondents' approval of FP was left out in the final model. As results in Table 5.3 and Table 1 in Appendix 1 show, the behaviour of this factor was not consistent with expectations and it remained insignificant in both cases. Desire for more children was left out of the analysis altogether owing to the exceptionally large standard errors of over 100 percent associated with it. This problem was persistent even after the missing cases were eliminated. This can be attributed to the fact that the same variable was used to define unmet need and cannot therefore be used again as an explanatory variable.

The variable number of methods known- spontaneous, was categorized into the categories of less than three methods, three to five methods and six and above methods. The categorization was based on the frequency distribution of the original variable. Education level was categorized into no education, primary education and secondary and above. Religion was categorized into Catholic, Protestant/ other Christian, and Muslim/ others that included those with no religion and other

religion.

The choice of reference categories was based on either the theoretical expectations or on the frequency distributions. As for the former case, the categories that stood the highest risk of having unmet need for contraception were chosen as the reference categories. This was done for the variables education level, place of residence, religion, discussion of FP with partner, number of methods known- spontaneous, and respondents' approval of FP. Where the choice of reference categories was based on frequency distributions, the categories with the highest frequencies were chosen. This was applied for the variables age (in five-year groups), number of living children (grouped), ethnicity and religion.

5.2. RESULTS OF BIVARIATE ANALYSIS

The results of cross-tabulation with chi-square analysis show that all the background factors have significant associations with unmet need for contraception at $\alpha=0.01$. As Table 5.1 shows, the significance of the χ^2 statistic for all the background factors is less than the alpha value at 0.01. As a result, the null hypothesis to be tested for these factors i.e. that of no significant association with the dependent variable, is rejected. By implication, the alternative hypothesis i.e. that of significant association with the dependent variable, is accepted.

The proportion of men with unmet need among all married men increases with increasing age from 0.2 percent for those aged 20-24 to 5.2 percent for those aged 45-49 years. It then drops to 4.3 percent for those aged 50-54 years.

Regional variations show that the proportion of men with unmet need among all married men

varies from 1.5 percent for Nairobi to 6.6 percent for Rift Valley province. Wide variations exist in the proportions of men with unmet need according to place of residence. It varies from 3.1 percent in the urban areas to 20.2 percent in the rural areas.

Variations according to the level of education show that 15.2 percent of all married men constitute men with unmet need who have primary level education, 5.3 percent have secondary and above level of education while 2.8 percent have no education.

The proportion of men with unmet need among all married men according to ethnic background ranges from 1.6 percent for the "other" category to 4.7 percent for Kikuyu. In the case of religious affiliation, the proportion of men with unmet varies from 1.7 percent for Muslim/ others, to 9.9 percent for Catholics, and to 11.7 percent for Protestant/ other Christians.

As for the number of living children a man has, the proportion of men with unmet need varies from 3.2 percent for those with less than four children to 8.0 percent for those with eight or more children, and to 12.1 percent for those with 4 to 7 children.

Table 5.1 gives the summary of the percent distribution of men with unmet need for contraception among all married men by background and intermediate factors. It also gives the level of significance of the associations these factors have with unmet need.

Table 5.1. Percent Distribution of Men With Unmet Need Among All Married Men by Various Characteristics

Characteristic	Percent With Unmet Need	Percent With No Need	Total	Chi-Square Test		
				Value	df	Significance
Age				160.734	6	0.000
20-24	0.2	5.7	5.9			
25-29	1.0	14.3	15.3			
30-34	3.2	18.7	21.9			
35-39	4.3	12.9	17.2			
40-44	5.1	12.4	17.5			
45-49	5.2	7.6	12.8			
50-54	4.3	5.1	9.4			
Total	23.3	76.7	100.0			
Education Level				32.461	2	0.000
No education	2.8	6.8	9.6			
Primary	15.2	40.4	55.6			
Secondary+	5.3	29.5	34.8			
Total	23.3	76.7	100.0			
Place of Residence				12.838	1	0.000
Urban	3.1	16.7	19.8			
Rural	20.2	60.0	80.2			
Total	23.3	76.7	100.0			
Region				27.329	6	0.000
Nairobi	1.5	5.8	7.3			
Central	3.5	8.9	12.4			
Coast	2.0	12.5	14.5			
Eastern	4.3	9.3	13.6			
Nyanza	3.1	10.4	13.5			
Rift Valley	6.6	20.0	26.6			
Western	2.3	9.8	12.1			
Total	23.3	76.7	100.0			
Religion				11.287	2	0.004
Catholic	9.9	25.8	35.7			
Prot other Xtian	11.7	42.9	54.6			
Muslim/others	1.7	8.0	9.7			
Total	23.3	76.7	100.0			

Table 5.1. Continued.

Characteristic	Percent With Unmet Need	Percent With No Need	Total	Chi-Square Test		
				Value	df	Significance
Ethnicity				28.136	7	0.000
Kalenjin	3.9	11.7	15.6			
Kamba	3.4	6.2	9.6			
Kikuyu	4.7	14.0	18.7			
Kisii	1.8	5.2	7.0			
Luhya	3.9	12.8	16.7			
Luo	2.2	9.8	12.0			
Meru Embu	1.8	6.0	7.8			
Other	1.6	11.0	12.6			
Total	23.3	76.7	100.0			
Number of Living Children				193.177	2	0.000
<4	3.2	39.3	42.5			
4-7	12.1	27.6	39.7			
8+	8.0	9.8	17.8			
Total	23.3	76.7	100.0			
Number of Methods Known-Spontaneous				4.493	2	0.106
<3	11.4	32.9	44.3			
3-5	9.9	35.7	45.6			
6+	2.0	8.1	10.1			
Total	23.3	76.7	100.0			
Number of Methods Known-Probed				3.166	2	0.205
<3	5.6	18.3	23.9			
3-5	12.3	43.9	56.2			
6+	5.4	14.5	19.9			
Total	23.3	76.7	100.0			
Discussed FP With Partner				5.304	2	0.071
Never	7.6	24.2	31.8			
Once twice	5.5	14.6	20.1			
More often	10.2	37.9	48.1			
Total	23.3	76.7	100.0			
Respondent Approves FP				0.048	1	0.826
Disapproves	2.0	7.3	9.3			
Approves	21.3	69.4	90.7			
Total	23.3	76.7	100.0			

Source: Computed from KDHS 1998 male survey data.

As Table 5.1 shows, none of the proximate determinants of unmet need for contraception among men has a significant association with unmet need either at $\alpha=0.01$ or at $\alpha=0.05$. The significance of the χ^2 statistic for these factors is greater than the alpha values of 0.01 and 0.05. The null hypothesis to be tested for these factors i.e. that of no significant association with the dependent variable is accepted.

Variations show that the proportion of men with unmet need among all married men is highest for men who spontaneously know less than three methods. They account for 11.4 percent. The lowest proportion of 2.0 percent constitutes those who know six or more methods spontaneously.

When the number of methods known is probed, the highest proportion of men with unmet need among all married men turns out to be those who know 3 to 5 methods. They account for 12.3 percent while the lowest proportion of 5.3 percent remains those who know six or more methods when probed.

Variations according to discussion of FP with partner show that the highest proportion of men with unmet need among all married men is 10.2 percent. It constitutes those who discuss FP with their partners more often. The lowest proportion of 5.5 percent, on the other hand, comprises those who discuss FP with their partners once or twice.

According to respondents' approval of FP, 2.0 percent of all married men having unmet need for contraception disapprove of FP. The highest proportion of 21.3 percent approve of FP.

compared to those with no education. The odds ratio is lowered by 0.7356 times. Education as a factor is not significant according to the results of model 1 and neither are its different categories. Likewise, men in urban areas are 0.7655 times less likely to have unmet need than those in rural areas. Place of residence, however, is not statistically significant.

Compared to Catholics, Protestant/ other Christians as well as Muslims/ others are less likely to have unmet need. Their odds are lowered by 0.7627 times and 0.6124 respectively. Religion as a factor as well as its different categories are not statistically significant.

Table 5.2 summarizes the results of model 1 of regression analysis.

Table 5.2. Results of Background Factors: Model 1

Variable	β	S.E.	df	Significance	Exp.(β)
Age			6	0.0007	
20-24	-1.1799	0.6171	1	0.0559	0.3073
25-29	-0.4663	0.3098	1	0.1322	0.6273
30-34 ^k					
35-39	0.3365	0.2193	1	0.1250	1.4000
40-44	0.2940	0.2204	1	0.1823	1.3418
45-49	0.6473	0.2331	1	0.0055	1.9103
50-54	0.8026	0.2573	1	0.0018	2.2314
Region			6	0.1928	
Nairobi	0.0880	0.3781	1	0.8160	1.0920
Central	0.2103	0.2373	1	0.4793	1.2341
Coast	-0.3955	0.3338	1	0.2361	0.6734
Eastern	0.0124	0.4223	1	0.9765	1.0125
Nyanza	-0.1937	0.3355	1	0.5637	0.8239
Rift Valley ^k					
Western	-0.7266	0.3091	1	0.0187	0.4836
Education Level			2	0.0859	
No education ^R					
Primary	0.0392	0.2132	1	0.8541	1.0400
Secondary+	-0.3071	0.2447	1	0.2095	0.7356

Table 5.2. Continued

Variable	β	S.E.	df	Significance	Exp.(β)
Place of Residence					
Rural ^R					
Urban	-0.2672	0.2524	1	0.3087	0.7655
Number of Living Children					
<4 ^R			2	0.0000	
4-7	1.1790	0.1975	1	0.0000	3.2513
8+	1.5923	0.2366	1	0.0000	4.9153
Ethnicity					
Kalenjin	-0.2620	0.1975	1	0.3841	0.7695
Kamba	0.6435	0.3831	1	0.0930	1.9032
Kikuyu ^R			7	0.0087	
Kisii	0.1625	0.4116	1	0.6931	1.1764
Luhya	0.4043	0.3165	1	0.2015	1.4983
Luo	-0.2565	0.3552	1	0.4702	0.7738
Meru/Embu	-0.2187	0.4502	1	0.6271	0.8035
Other	-0.2738	0.3732	1	0.4632	0.7605
Religion					
Catholic ^R			2	0.0600	
Protestant/other	-0.2709	0.1382	1	0.0501	0.7627
Muslims/others	-0.4903	0.2673	1	0.0666	0.6124
Constant	-1.9638	0.3871	1	0.0000	

-2 Log Likelihood 1490.259

Model Chi-square 286.113

26

0.0000

^RReference category.

Source: Computed from KDHS 1998 male survey data.

As Table 5.2 shows, number of living children emerges as a significant factor in explaining the likelihood of having unmet need for contraception among men. It is statistically significant at $\alpha=0.05$. Compared to men who have less than four living children, those who have four to seven children are 3.2513 times more likely to have unmet need. The ratio increases to 4.9153 times for those who have eight or more children. In both cases, the parameter estimates are statistically significant at $\alpha=0.01$.

Ethnicity shows a mixed relationship with the likelihood of having unmet need among men. Kamba are 1.9032 times more likely to have unmet need than Kikuyu. Kisii and Luhya are also 1.1764 times and 1.4983 times more likely to have unmet need respectively compared to Kikuyu. The other ethnic groups, that is Luo, Meru/ Embu and "other" are less likely to have unmet need compared to Kikuyu. Their odds are lowered by 0.7738 times, 0.8035 times and by 0.7605 times in that order. Whereas none of the parameter estimates for the different ethnic groups is statistically significant, ethnicity as a factor is significant at 99 percent confidence level. The overall model is also significant at $\alpha=0.01$.

5.3.2. Results of Intermediate Factors: Model 2

Some of the intermediate factors show unexpected patterns of relationship with the likelihood of experiencing unmet need for contraception among men. For instance, men who approve of FP are 1.1578 times more likely to have unmet need than those who disapprove. Similarly, men who discuss FP with their partners once or twice are 1.2510 times more likely to have unmet need than those who never discuss.

Other factors show expected patterns of relationship with unmet need for contraception. Compared to men who know less than three methods spontaneously, those who know three to five and those who know six or more methods are less likely to have unmet need. Their odds are lowered by 0.7869 and 0.7285 times respectively. Men who discuss FP with their partners more often are 0.9059 times less likely to have unmet need than those who never discuss.

The results of model 2 are shown in Table 5.3.

Table 5.3. Results of Intermediate Factors: Model 2

Variable	β	S.E.	df	Significance	Exp.(β)
Number of Methods Known- Spontaneous			2	0.1224	
<3 ^R					
3-5	-0.2397	0.1295	1	0.0645	0.7869
6+	-0.3168	0.2197	1	0.1493	0.7285
Discussed FP With Partner			2	0.1111	
Never ^k					
Once/twice	0.2240	0.1683	1	0.1834	1.2510
More often	-0.0988	0.1494	1	0.5086	0.9059
Respondent Approves FP					
Disapproves ^R					
Approves	0.1465	0.2182	1	0.5020	1.1578
Constant	-1.1782	0.1992	1	0.0000	
-2 Log Likelihood 1740.843					
Model chi-square	10.059		5	0.0736	

^RReference category.

Source: Computed from KDHS 1998 male survey data.

It is evident from Table 5.3 that none of the intermediate variables or their different categories is statistically significant. The value of the model chi-square is also not statistically significant.

5.3.3. Results of Background and Intermediate Factors: Model 3

When the background factors are controlled for, discussion of FP with partner turns out to be a significant factor in explaining the likelihood of having unmet need among men. It is statistically significant at $\alpha=0.01$. However, those who discuss FP with their partners more often now turn out to be 1.2340 times more likely to have unmet need than those who never discuss though the relationship is not statistically significant. Those who discuss FP with their partners once or twice maintain the kind of relationship with unmet need observed in model 2. The only difference is that the odds ratio of 1.8315 is higher than 1.2510 in model 2, and is statistically significant at $\alpha=0.01$.

Number of methods known- spontaneous retains the kind of relationship with unmet need observed in model 2. Men who know 3 to 5 methods, and those who know 6 or more methods spontaneously are less likely to have unmet need than those who know less than three methods. Their odds are lowered by 0.7195 times and 0.6063 times respectively. This factor and its different categories turn out to be statistically significant at 95 percent confidence level.

As for the controls, age exhibits the same kind of relationship with unmet need observed in model 1. Men in age groups 20-24 and 25-29 are less likely to have unmet need than those in age group 30-34. Their odds are lowered by 0.2854 times and 0.5772 times respectively and the relationship of the former category with unmet need is statistically significant at $\alpha=0.05$. Men in age groups 35-39, 40-44, 45-49 and 50-54 are more likely to have unmet need than those in the age group 30-34. Their odds are raised by 1.4019 times, 1.3510 times, 1.9141 times, and 2.3697 times in that order. Age remains significant at $\alpha=0.01$ as in model 1. The same applies to the parameter estimates of the age groups 45-49 and 50-54. The only difference is that whereas the odds ratios in model 3 for age groups 20-24 and 25-29 are lower than those observed in model 1, the ratios for the other age groups are higher than those in model 1 as shown by Table 5.4.

Contrary to what is observed in model 1, primary level education turns out to be lowering the risk of having unmet need compared to having no education by 0.9461 times. Those with secondary and above level of education are 0.7011 times less likely to have unmet need compared to those with no education. Education level remains insignificant as in model 1 and so are its different categories. Apart from the change noted in the effect of primary education, the odds ratio for secondary and above level of education is lower than the one observed in model 1.

Men in urban areas are 0.8189 times less likely to have unmet need than their rural counterparts. Similar to what is observed in model 1, the nature of the relationship is, however, not statistically significant though the odds ratio is higher than the ratio of 0.7665 observed in model 1.

Protestant/ other Christians and Muslims/ others are less likely to have unmet need than Catholics. Their odds are lowered by 0.7695 times and 0.5890 times respectively. Religion and its categories remain statistically insignificant as in model 1. The odds ratio for Protestant/ other Christians is higher than that observed in model 1 while that of Muslim/ others is lower than the one in model 1. Table 5.4 shows the changes in the odds ratios and the level of significance for the various factors in models 1 to 3.

Table 5.4. Summary of Odds Ratios, Models 1 to 3.

Variable	Model 1	Model 2	Model 3
Age			
20-24	0.3073		0.2854*
25-29	0.6273		0.5772
30-34 ^R			
35-39	1.4000		1.4019
40-44	1.3418		1.3510
45-49	1.9103**		1.9141**
50-54	2.2314**		2.3691**
Region			
Nairobi	1.0920		
Central	1.2341		
Coast	0.6734		
Eastern	1.0125		
Nyanza	0.8239		
Rift Valley ^R			
Western	0.4836*		
Education Level			
No education ^R			
Primary	1.0400		0.9461
Secondary+	0.7356		0.7011
Place of Residence			
Rural ^R			
Urban	0.7655		0.8189
Religion			
Catholic ^R			
Prot./other Xtian	0.7627		0.7695
Muslim/others	0.6124		0.5890
Number of Living Children			
0-4 ^R			
4-7	3.2513**		3.2605**
8+	4.9153**		5.0355**

Table 5.4. Continued.

Variable	Model 1	Model 2	Model 3
Ethnicity			
Kalenjin	0.7695		0.6074*
Kamba	1.9032		1.6483*
Kikuyu ^R			
Kisii	1.1764		0.8654
Luhya	1.4983		0.8842
Luo	0.7738		0.5373
Meru/Embu	0.8035		0.7732
Other	0.7605		0.4437
Number of Methods Known-Spontaneous			
<3 ^R			
3-5		0.7869	0.7195*
6+		0.7285	0.6063*
Discussed FP With Partner			
Never ^R			
Once/twice		1.2510	1.8315**
More often		0.9059	1.2340

^RReference category.

*Significant at $\alpha=0.05$.

**Significant at $\alpha=0.01$.

Source: Computed from KDHS 1998 male survey data.

As Table 5.4 shows, number of living children maintains the kind of relationship with unmet need that is observed in model 1. Men who have 4 to 7 living children are 3.2605 times more likely to have unmet need than those who have less than 4 children. Those who have 8 or more children are 5.0355 times more likely to have unmet need than those who have less than 4 children. In both instances, the parameter estimates are statistically significant at $\alpha=0.01$. Number of living children as a factor also shows the same level of statistical significance. The odds ratios for both categories are, however, higher than those observed in model 1.

Compared to Kikuyu, Kamba are 1.6483 times more likely to have unmet need. All the other ethnic groups that include Kalenjin, Kisii, Luhya, Luo, Meru/ Embu and "other" are less likely to have unmet need compared to Kikuyu. Their odds are lowered by 0.6074 times, 0.8654 times, 0.8842

times, 0.5373 times, 0.7732 times, and by 0.4437 times in that order. Ethnicity remains statistically significant at $\alpha=0.01$ and so is the category of "other". The parameter estimates for Kalenjin, Kamba and Luo are statistically significant at $\alpha=0.05$. The odds ratios for all the categories of ethnicity are lower than the ratios observed in model 1. Table 5.5 gives the summary of the results of model 3.

Table 5.5. Results of Background and Intermediate Factors: Model 3

Variable	β	S.E.	df	Significance	Exp.(β)
Age			6	0.0002	
20-24	-1.2539	0.6231	1	0.0442	0.2854
25-29	-0.5496	0.3097	1	0.0760	0.5772
30-34 ^R					
35-39	0.3378	0.2208	1	0.1260	1.4019
40-44	0.3008	0.2212	1	0.1738	1.3510
45-49	0.6493	0.2359	1	0.0059	1.9141
50-54	0.8628	0.2608	1	0.0009	2.3697
Education Level			2	0.1669	
No education ^k					
Primary	-0.0554	0.2167	1	0.7982	0.9461
Secondary+	-0.3551	0.2554	1	0.1644	0.7011
Place of Residence					
Rural ^k					
Urban	-0.1998	0.1900	1	0.2931	0.8189
Religion			2	0.0559	
Catholic ^R					
Prot/other Xtian	-0.2621	0.1389	1	0.0592	0.7695
Muslims/others	-0.5294	0.2718	1	0.0514	0.5890
Number of Living Children			2	0.0000	
<4 ^R					
4-7	1.1819	0.1987	1	0.0000	3.2605
8+	1.6165	0.2381	1	0.0000	5.0355

Table 5.5. Continued.

Variable	β	S.E.	df	Significance	Exp.(β)
Ethnicity			7	0.0002	
Kalenjin	-0.4986	0.2230	1	0.0254	0.6074
Kamba	0.4997	0.2432	1	0.0399	1.6483
Kikuyu ^R					
Kisii	-0.1445	0.2861	1	0.6135	0.8654
Luhya	-0.1230	0.2173	1	0.5712	0.8842
Luo	-0.6211	0.2528	1	0.0140	0.5373
Meru/Embu	-0.2572	0.2734	1	0.3460	0.7732
Other	-0.7917	0.2790	1	0.0036	0.4437
Number of Methods Known- Spontaneous			2	0.0404	
<3 ^R					
3-5	-0.3291	0.1481	1	0.0263	0.7195
6+	-0.5004	0.2549	1	0.0497	0.6063
Discussed FP With Partner			2	0.0045	
Never ^R					
Once/twice	0.6052	0.1862	1	0.0012	1.8315
More often	0.2102	0.1632	1	0.1976	1.2340
Constant	-1.7917	0.3336	1	0.0000	
-2 Log Likelihood	1475.085				
Model chi-square	294.128		24	0.0000	

^RReference category.

Source: Computed from KDHS 1998 male survey data.

As Table 5.5 shows, the value of the model chi-square is statistically significant at $\alpha=0.01$. It turns out, therefore, that models 1 and 3 are significant while model 2 is not. The table also shows that whereas discussion of FP with partner once or twice is significant, discussion of FP with partner more often is not. The same results are observed in Table 1 in Appendix 1 and Table 2 in Appendix 2. This can be attributed to the fact that discussion of FP once or twice is more likely to be associated with unmet need compared to discussion of FP more often. The latter attribute is more likely to be associated with increased contraceptive practice; hence less likely to be significant in determining the likelihood of having unmet need.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1. SUMMARY

The study set out to analyze unmet need for contraception among currently married men in Kenya using data from the 1998 KDHS. Specifically, it aimed at estimating the magnitude of the need, investigating the relationship between men's unmet need and the proximate determinants of the need, and finding out the nature of such relationship when men's background characteristics such as age, education level, place of residence, region of residence, religion, ethnicity and number of living children are controlled for.

The estimation of the magnitude of unmet need for contraception among men was accomplished by the use of the current status model, which was used to determine the inconsistency between men's fertility preferences and contraceptive behaviour at the time of the survey. The definition of unmet need was adopted from that used by Ngom (1997). Men with unmet need were defined as those who were married at the time of the survey, were not using any modern method of contraception then, but who indicated that they desired no more children.

As a first step to the multivariate analysis, bivariate analysis was done involving cross-tabulation with chi-square. The objective was to determine the kind of association the background and intermediate factors had with unmet need for contraception among men. The analysis of the effect of the background and proximate factors on unmet need was accomplished by the use logistic regression. The aim was to determine the probability of an individual with a given set of characteristics i.e. background or proximate factors, having unmet need for contraception.

Three models were run. The first model involved the background factors that included age, education level, place of residence, region, religion, ethnicity, number of living children and the dependent variable unmet need. In the second model, the intermediate factors i.e. number of methods known- spontaneous, discussion of FP with partner, and respondents' approval of FP were run with the dependent variable. The third model involved selected background and intermediate factors with the dependent variable, unmet need.

The interpretation of the regression parameters was done in terms of the odds of having unmet need. The idea was to determine whether a particular characteristic lowered or raised the odds of an individual possessing that characteristic having unmet need compared to an individual with the characteristic taken as the reference point, and whether such a relationship was statistically significant.

6.2. CONCLUSION

The first objective of the study, which links up with the first research question, was to estimate the level of men's unmet need for contraception. Compared to the 1989 and 1993 levels estimated by Ngom (1997), the trend shows that the level of unmet need for contraception among men has been declining over time. However, the pace of the decline was considerably slow between 1993 and 1998 compared to the decline between 1989 and 1993. Investigating the reasons for the slow pace of the decline in the latter period i.e. between 1993 and 1998 is an area which can be of interest to those involved in the provision of RH services to men. Results can help to shape the focus of future programmes. For instance, the programmes to be adopted when the reasons are established to be due to increased contraceptive practice among men are different from those which can be adopted

in case the results show that the trend is due to measurement problems.

According to the results of the frequency distributions, the highest percentage of men with unmet need for contraception are aged between 45 and 49 years, have 4 to 7 living children, live in rural areas, and are to be found in Rift Valley province. These results are consistent with expectations. The results further show that the highest percentage of men with unmet need belong to the Kikuyu ethnic group, are Protestants/ other Christians, have 4 to 7 living children, and are in monogamous unions. These distributions, on the other hand are not consistent with expectations.

As far as knowledge, attitude and practice of contraception are concerned, the highest percentage of men with unmet need know modern methods of contraception, know less than three methods spontaneously, know between 3 and 5 methods when probed, had never used a modern method of contraception, and do not intend to use a method in future. The distribution also shows that the highest percentage of these men cited menopause as the main reason for not intending to use a method in future, approved of FP, and had discussed FP with their partners more often. Whereas knowledge and practice characteristics conform to expectations, attributes associated with attitude do not.

The second objective of the study, which is linked to the second research question, was to investigate the relationship between men's unmet need for contraception and the proximate determinants of unmet need among such men. To this end, the first four hypotheses were tested based on the results of model 2 of the logistic regression analysis.

The first hypothesis stated that men who desire more children have higher levels of unmet need than those who want no more children. This hypothesis was not tested because, as pointed out earlier, desire for more children had to be dropped from the analysis due to the high standard errors associated with it. Its initial inclusion in the analysis affected such factors as discussion of FP with partner and respondents' approval of FP as well.

Casterline et al (1997) found that weakly held preferences accounted for some unmet need among women in the Philippines. They noted, however, that the evidence was suggestive but not decisive. Whereas they made an effort to measure strength of preferences, they have pointed out that the tools for such an assessment are not well developed in demography or elsewhere in the social sciences (c.f. Krosnick and Abelson, 1992). This may explain why desire for more children could not be used successfully as an indicator of preferences to determine the likelihood of men having unmet need for contraception from the KDHS data. Moreover, the fact that it has been used to define the unmet need could also account for the high standard errors associated with it. A more appropriate indicator of the strength of fertility preferences cannot be obtained from the KDHS data.

The second hypothesis to be tested was that men who know few modern methods of contraception have higher levels of unmet need than those who know more of such methods. This hypothesis holds true for the number of methods known spontaneously. As shown in Table 5.3, men who know 3 to 5 and six or more methods spontaneously have lower odds than those who know less than three of such methods. Knowledge is not significant. The findings conform to those of Casterline et al (1997) for women in the Philippines. They pointed out that in light of the near

universal awareness of contraceptive methods among Philippine women, lack of knowledge could not account for the substantial proportion of women who did not practice contraception.

The third hypothesis stated that men who approve of modern methods of contraception have lower levels of unmet need than those who do not approve. As results in Table 5.3 show, men who approve of FP have higher odds than those who disapprove and the relationship is not statistically significant. The third hypothesis is therefore proved otherwise by these results. The variations noted for this factor could therefore have occurred by chance.

Men's approval of modern methods of contraception was used as an indicator of social and cultural acceptability of FP and the fear of side effects. Casterline et al (1997) developed measures for these factors and found that among the Philippine women, quantitative data suggested that the two factors were significant obstacles to the use of contraception among women with unmet need. The inconsistent results for men could therefore be a result of lack of an appropriate indicator from the KDHS data to capture these factors, or it can be a result of some systematic errors.

According to the results in Table 5.3, the fourth hypothesis is also proved otherwise. Discussion of FP with partner is not a significant factor in determining the likelihood of men having unmet need. Just as in the case of approval of FP, the variations in the effects of the various categories of this factor could have occurred by chance.

According to the findings by Casterline et al (1997), conflicting preferences of spouses contributed significantly to unmet need among Philippine women. Discussion of FP with partner was used in this study to indicate spousal differences in preferences so that men who never discussed FP with their partners were assumed to have conflicting preferences. The inconsistent results obtained could thus indicate that an improper indicator could have been used or it could be due to some systematic errors.

From these results, it is evident that none of the proximate determinants of unmet need for contraception among men is statistically significant. The overall model is not statistically significant as well while the results for some of the factors are mixed and do not confirm the hypotheses to be tested. Most of the observed variations could have occurred by chance.

It can therefore be appropriate to conclude that the proximate determinants of unmet need cannot be used in isolation to determine the likelihood of men with such characteristics having unmet need. This calls for the introduction of some of background factors. The second objective of the study, and by extension the second research question, is answered thus: the relationship between men's unmet need for contraception and the proximate determinants of unmet need is such that these factors cannot significantly explain the likelihood of the occurrence of unmet need among men in isolation.

The third objective of the study was tied to the third research question. It was to find out the nature of the relationship between the proximate determinants of men's unmet need for contraception and the unmet need when men's background characteristics are controlled for. To realize this objective,

model 1 was run involving the background factors alone to determine their effect on unmet need before introducing them as controls in model 3. The results helped to test for the fifth hypothesis.

Age emerges as a significant factor in explaining the likelihood of men having unmet need for contraception. Men who are aged between 20 and 29 years are less likely to have unmet need compared to those aged between 30 and 34 years. Those aged between 35 and 54 years are more likely to have unmet need than those in the reference category. Karanja (1997) established the same for women and found that age was an important determinant of unmet need to space among women. Programmes aimed at addressing the issue of unmet need for contraception among men should therefore focus on age since different age groups have different needs.

Education level is not a significant factor in determining which men are more likely to have unmet need. Karanja (1997) found that education had inconsistent relationship with unmet need among women in Kenya. The variations observed for the case of education level in this study could therefore be a result of chance. Such variations were established for women by Otieno and Karanja (2000) who argued that it is difficult to determine accurately the particular reasons for this observation. They have proposed that one possible reason could be the omission of some important factors affecting unmet need that may not be observed.

Contrary to what was established for women by Karanja (1997) that place of residence had a significant relationship with unmet need to space, this factor is not significant for men in all the models in which it is included. The relationship with unmet need, however, follows the one that has been established for women, that is, that those who live in urban areas are all less likely to have

unmet need than those who live in the rural areas. Given that this factor is not significant, the observed variations could therefore have occurred by chance as well.

Region is not a significant factor in determining men who are more likely to have unmet need. This is contrary to what Otieno and Karanja (2000) found for women that region was one of the most powerful factors which distinguished women likely to have unmet need. It should be noted, however, that in a model from which ethnicity is excluded, it turns out to be significant. This points to the possibility of the existence of high correlation between these two factors.

The fact that a man belongs to a certain religious group is not a significant determinant of his likelihood of having unmet need as well. Compared to the findings for women, Karanja (1997) found that religion had no significant relationship with women's unmet need to space and the total unmet need. Otieno and Karanja (2000) observed that the case for religion could be ambiguous and that its actual effect could only be discerned if the extent of one's commitment to the religious ideals could be measured. This is not possible to obtain from the KDHS data.

The number of living children a man has also emerged as a significant factor in determining the likelihood of unmet need for contraception among men. The findings are consistent with what Karanja (1997) established for women, that is, that CEB was significantly related to the unmet need to limit and the total unmet need. The relationships between the various categories of the number of living children and men's unmet need for contraception are also consistent with expectations and the findings of Karanja (1997) for women. Men with more living children are more likely to have unmet need for contraception than those with few living children and the relationship is also

significant. For women, Karanja found that more CEB were associated with higher risk of unmet need to limit and the total unmet need.

Men's ethnic background also turns out to be a significant determinant of the likelihood of having unmet need for contraception. It is interesting to note that even in a model from which region is excluded, this factor still remains significant. It therefore turns out to be one of the most powerful factors determining unmet need for contraception among men. Ethnic variations may reflect the different cultural patterns especially regarding the demand for children, which may determine the use or non-use of contraceptives among men with unmet need.

Some of the proximate determinants of unmet need for contraception turn out to be significant when men's background characteristics are introduced as controls. Discussion of FP with partner is one such factor that turns out to be significant. The category of those who discuss FP with their partners once or twice is also statistically significant, while the parameter estimate for those who discuss FP more often is not. This can be attributed to the fact that more frequent discussions are more likely to be associated with strong preference to use contraception; hence are less likely to be significant in determining the likelihood of having unmet need. Number of methods known-spontaneous also turns out to be significant and so are the parameter estimates for its various categories.

The fifth hypothesis of the study is confirmed thus: that unmet need for contraception varies according to men's age, level of education, place of residence, region of residence, religious affiliation, ethnicity and the number of living children a man has. Whereas some of these variations are consistent with the findings on women in other studies, others are not. The nature of the relationship between the proximate determinants and unmet need for contraception when the background factors are introduced as controls is such that some of the intermediate factors turn out to be significant. Others such as respondents' approval of FP remain insignificant. The third objective of the study, which was linked to the third research question, is answered thus: that the nature of the relationship between unmet need for contraception among men and some of its proximate determinants changes significantly when men's socio-economic, cultural and demographic characteristics are controlled for.

I can therefore conclude from this study that, first; the pace of the decline in the level of men's unmet need for contraception was considerably slow between 1993 and 1998 compared to between 1989 and 1993. Secondly, the proximate determinants alone have failed to account for significant explanations of men's unmet need for contraception unless they are viewed in the wider context of men's socio-economic, cultural and demographic characteristics. Thirdly, age, number of living children and ethnicity emerge as the strongest determinants of unmet need for contraception among men. Discussion of FP with partner and number of methods known spontaneously emerge as strong factors only when background factors are controlled for. The significance of region depends on the exclusion of ethnicity from the model, and is therefore not very stable.

Two possible reasons could be posited for the observed relationship. The first reason could be to do with the data used. The study by Casterline et al (1997) among Philippine women used primary data and they were able to develop measures for the intermediate factors. It could be that the selected indicators did not capture the proximate factors well. The second possible reason is that given that all the background factors have significant associations with unmet need and the intermediate factors do not, the effect of the latter set of factors can best be determined against the background of the first set of factors.

6.3. RECOMMENDATIONS

6.3.1. Recommendations for Policy

The study reveals that a significant proportion of men with unmet need for contraception do not intend to use a method in future. Within intention to use, they account for 43.1 percent while another 6.6 percent are unsure about future use. This is an issue, which should be of concern to those involved in programmes aimed at increasing men's involvement in RH.

Knowledge of modern methods of contraception among men with unmet need is near universal given that 97.6 percent of these men know of such methods. Their attitude is also favourable since 99.4 percent of them approve of FP. What policy makers and planners involved in male RH need to do therefore is to encourage practice of contraception among men. Men should be enlightened on the benefits of using contraception in the light of the prevailing socio-economic conditions in the country that negate the rationale of having many children and of engaging in unprotected sex given the AIDS pandemic.

The slow pace of the decline in the level of men's unmet need for contraception between 1993 and 1998 is an issue which programme managers involved in male RH need to address. One would have expected, for instance, that if the pace of the decline between 1989 and 1993 were to be maintained, the level of men's unmet need in 1998 would be 15.7 percent. Policy makers need to find out why the pace of the decline had to drop drastically from about 2.15 percentage points per annum between 1989 and 1993 to about 0.04 percentage points per annum between 1993 and 1998 to form the basis of future programme focus.

Programmes aimed at promoting spousal communication should be of interest to planners and policy makers involved in male RH. It is not only a way of increasing the involvement of men in RH but also gaining male support of female contraception. This lends credence to the argument that it is not enough to talk about women unmet need or men unmet need, but rather couple unmet need.

6.3.2. Recommendations for Further Research

Further research on men's unmet need for contraception should focus on a more appropriate measure of men's unmet need given that there is no generally agreed upon concept for men as there is for women. In the process, further research should also attempt to define unmet need for sexually active unmarried men as it has been done for sexually active unmarried women. If this can be achieved, it can present a good opportunity to compare the levels of unmet need for contraception between these two groups of people.

In the process of trying to develop an appropriate measure of men's unmet need for contraception, attempts should be made to develop measures that can be used to capture the strength of fertility

preferences held by men, their lack of knowledge of and attitude toward contraception, as well as the role of the spouse in determining use or non-use of contraception. This is because these are some of the factors that programmes aimed at male involvement in RH may be interested in with a view to changing them for the better. It could be that the results of this study were limited by the lack of appropriate indicators of these factors from the KDHS data.

Since contraceptive practice is couple affair, it may not be enough to talk about men's unmet need without incorporating their wives' needs. It may also not be enough to look at women's unmet need without incorporating men's needs. In trying to develop a more appropriate measure of men's unmet need, further research should also be geared toward finding an appropriate definition of couple unmet need. Such a measure can be used to develop estimates that can be compared to the level of men's or women's unmet need and to determine the effect it may have on the general level of unmet need.

There is need for qualitative research such as group or focus group discussions to support or prove otherwise some of the findings of this study. This is more so for findings which do not conform to expectations or those which are not consistent with findings for women in other studies. Qualitative research could further help in explaining better some aspects that could not be captured by the quantitative findings. Qualitative research could, for instance, help in securing a better understanding of the reasons for the considerably slow pace of the decline in men's unmet need between 1993 and 1998 compared to between 1989 and 1993.

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APPENDIX 1

Table A1. Results of Background and Intermediate Factors: All Factors

Variable	β	S.E.	df	Significance	Exp.(β)
Age			6	0.0002	
20-24	-1.1982	0.6210	1	0.0537	0.3017
25-29	-0.4883	0.3119	1	0.1175	0.6137
30-34 ^R					
35-39	0.4004	0.2235	1	0.0732	1.4925
40-44	0.3154	0.2243	1	0.1597	1.3708
45-49	0.7132	0.2389	1	0.0028	2.0404
50-54	0.9034	0.2655	1	0.0007	2.4680
Region			6	0.2737	
Nairobi	0.1211	0.3836	1	0.7522	1.1288
Central	0.2063	0.3035	1	0.4967	1.2291
Coast	-0.4093	0.3370	1	0.2245	0.6641
Eastern	0.0323	0.4267	1	0.9397	1.0328
Nyanza	-0.1885	0.3433	1	0.5829	0.8282
Rift Valley ^R					
Western	-0.6542	0.3163	1	0.0386	0.5198
Education Level			2	0.2175	
No education ^R					
Primary	-0.0383	0.2208	1	0.8624	0.9625
Secondary+	-0.3199	0.2600	1	0.2185	0.7262
Place of Residence					
Rural ^R					
Urban	-0.2244	0.2638	1	0.3950	0.7990
Religion			2	0.0698	
Catholic ^R					
Prot/other Xtian	-0.2643	0.1404	1	0.0597	0.7633
Muslims/others	-1.4960	0.2742	1	0.0705	0.6089
Number of Living Children			2	0.0000	
<4 ^R					
4-7	1.1910	0.1994	1	0.0000	3.2905
8+	1.6359	0.2410	1	0.0000	5.1340

Table A1 Continued.

Variable	β	S.E.	df	Significance	Exp.-(β)
Ethnicity			7	0.0056	
Kalenjin	-0.3364	0.3081	1	0.2748	0.7143
Kamba	0.6262	0.3853	1	0.1041	1.8705
Kikuyu ^R					
Kisii	0.1824	0.4208	1	0.6647	1.2001
Luhya	0.4331	0.3218	1	0.1783	1.5421
Luo	-0.3407	0.3612	1	0.3455	0.7113
Meru Embu	-0.1676	0.4524	1	0.7110	0.8451
Other	-0.3206	0.3775	1	0.3957	0.7257
Number of Methods Known- Spontaneous			2	0.0220	
<3 ^R					
3-5	-0.3819	0.1503	1	0.0111	0.6826
6+	-0.5099	0.2593	1	0.0492	0.6005
Discussed FP With Partner			2	0.0150	
Never ^R					
Once/twice	0.5374	0.1944	1	0.0057	1.7115
More often	0.1375	0.1717	1	0.4232	1.1474
Respondent Approves FP					
Disapproves ^R					
Approves	0.3554	0.2408	1	0.1400	1.4268
Constant	-2.2323	0.4319	1	0.0000	
-2 Log Likelihood	1448.918				
Model chi-square	301.984		31	0.0000	

^RReference category.

Source: Computed from KDHS 1998 male survey data.

APPENDIX 2

Table A2. Results of Background and Intermediate Factors: Ethnicity Excluded

Variable	β	S.E.	df	Significance	Exp.(β)
Age			6	0.0001	
20-24	-1.1336	0.6162	1	0.0658	0.3219
25-29	-0.5085	0.3086	1	0.0994	0.6014
30-34 ^R					
35-39	0.3453	0.2194	1	0.1156	1.4124
40-44	0.2648	0.2199	1	0.2285	1.3031
45-49	0.6982	0.2346	1	0.0029	2.0100
50-54	0.8897	0.2594	1	0.0006	2.4343
Region			6	0.0119	
Nairobi	0.3656	0.3626	1	0.3132	1.4414
Central	0.3976	0.2150	1	0.0644	1.4882
Coast	-0.3481	0.2528	1	0.1685	0.7061
Eastern	0.4286	0.2044	1	0.0360	1.5351
Nyanza	-0.1155	0.2140	1	0.5894	0.8909
Rift Valley ^k					
Western	-0.1558	0.2373	1	0.5115	0.8557
Education Level			2	0.2342	
No education ^R					
Primary	0.0383	0.2141	1	0.8458	1.0425
Secondary+	-0.2538	0.2515	1	0.3486	0.7900
Place of Residence					
Rural ^R					
Urban	-0.2216	0.2550	1	0.3848	0.8012
Religion			2	0.0378	
Catholic ^R					
Prot/other Xtian	-0.2729	0.1368	1	0.0460	0.7611
Muslims/others	-0.5550	0.2639	1	0.0355	0.5741
Number of Living Children			2	0.0000	
<4 ^R					
4-7	1.1777	0.1968	1	0.0000	3.2469
8+	1.5977	0.2364	1	0.0000	4.9417
Number of Methods Known- Spontaneous			2	0.0220	
<3 ^R					
3-5	-0.2775	0.1460	1	0.0572	0.7577
6+	-0.3889	0.2550	1	0.1273	0.6778

Table A2. Continued

Variable	β	S.E.	df	Significance	Exp.(β)
Discussed FP With Partner			2	0.0066	
Never ^a					
Once/twice	0.5862	0.1856	1	0.0016	1.7972
More often	0.2312	0.1616	1	0.1524	1.2601
Constant	-2.2199	0.3160	1	0.0000	
-2 Log Likelihood 1487.452					
Model chi-square 281.761			23	0.0000	

^aReference category.

Source: Computed from KDHS 1998 male survey data.