# DHS WORKING PAPERS

## Trends and Determinants of Unmet Need for Family Planning in Kenya

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**ABSTRACT**

This study examines the levels, trends, and determinants of unmet need for family planning in Kenya between 1993 and 2003. Data come from the 1993, 1998, and 2003 Kenya Demographic and Health Surveys (KDHS). A starting point for this study is the observation that contraceptive prevalence and fertility in Kenya have levelled off in the recent past. These trends have implications for the Kenyan family planning program, and in particular the demand for contraception and access to services. The concept of unmet need for family planning brings these two issues together. Presumably, if most of the potential demand for family planning could be met with supplies and services, then contraceptive use would rise again, and fertility would fall further.

Between 1993 and 1998 total unmet need declined, but then remained constant between 1998 and 2003, at about 25%. The same pattern is observed with regard to unmet need and total potential demand for modern contraceptive methods. Among the salient differentials the study identified based on descriptive statistics, total unmet need decreases with women's age, level of education, household wealth, exposure to family planning messages, and employment. However, total unmet need is higher among women with a higher number of living children and those who have primary-level education. While working women with unmet need are more likely to report method-related reasons for non-use of family planning methods, they are less likely to report opposition to family planning than their counterparts who do not work.

Regression analysis shows that several variables are significantly related to total unmet need. These include women's age, number of living children, secondary or higher level of education, household wealth, current work status, exposure to media messages

about family planning, and discussion with the partner about family planning. Contact with health services is also significantly linked to unmet need for family planning. This finding emerges as the most interesting result of the study, with its implication that contact with health services generates demand for family planning but often does not meet this demand. It is therefore recommended that health care services make full use of opportunities to provide family planning information and services.

**INTRODUCTION**

The Kenyan family planning program traces its roots to the 1950s when a group of volunteers started what was to become the Family Planning Association of Kenya (FPAK). Nevertheless, it was not until 1967 that a national family planning program was launched. Under this plan, family planning was integrated into the maternal and child health division of the Ministry of Health. In 1984, the Government ratified a set of population policy guidelines to assist in the implementation of the program. Reflecting the 1994 International Conference on Population and Development (ICPD), these guidelines were further revised in the population policy for sustainable development, issued in 2000 (United-Nations 1994; Jain 1998; CBS et al. 2004).

Alongside these developments in population policy and programs, Kenya's demographic and contraceptive-use indicators have varied in interesting patterns. Contraceptive prevalence rose from just 7% in 1977/78 to 39% in 1998, but then did not change much by the time of the 2003 Kenya Demographic and Health Survey (KDHS) (CBS et al. 2004)

In view of this levelling off of previous increases in contraceptive use and decreases in fertility rates, family planning programs need to consider what that they should do in order to revitalise the program. Two fundamental concepts underlying the design of family planning programs —people's motivation for fertility control and access to family planning services—help to provide focus (Easterlin and Crimmins 1985). While a number of factors affect a person's motivation for fertility control, key variables include child survival and socio-economic status at the household or community level (Bulatao and Lee 1983). Once a couple is motivated to control fertility and has decided to use

family planning to do so, then access to contraception, including learning about and using an appropriate method, becomes critical (Hammerslough 1992).

The concept of unmet need for family planning brings these two concepts, motivation and access, together. Unmet need is a linchpin for investment in family planning programs (Casterline and Sinding 2000; Casterline et al. 2003). Essentially, the concept of unmet need for family planning highlights and quantifies the inconsistency or gap between women's fertility preferences and their contraceptive behaviour (Mauldin 1965). The often substantial unmet need identified in DHS surveys suggests the key question: "why are women who say that they do not want any more children at all, or who want to space their next birth, not using any family planning method?"

This study examines the trends and determinants of unmet need for family planning methods in Kenya. Unmet need, which had declined considerably between 1993 and 1998, levelled off thereafter to stand at 24% in 1998 and 25% in 2003 (Westoff and Cross 2006; Khan et al. 2007). To some extent the trends in fertility, contraceptive prevalence, and unmet need may be related to the performance of the family planning program. If women desire more children (or that desire has remained at a high and constant level, as is the evidence from the 2003 KDHS) then the presence of unmet need could reflect a problem of access to contraceptive methods among women who wish to space or limit births. Other factors, quite apart from program interventions could be responsible for shifts in Kenyan society towards increased family size desires, however. The Kenyan family planning program may also bear some responsibility, as motivating couples to adopt smaller family desires, as well as providing family planning services, are part of its mandate.

The paper is structured as follows. In section two, issues in the concept of unmet need are briefly examined. In section three, the data sources and methods used in the study are highlighted. The results are presented in section four, and the paper ends in section five with discussion, conclusions, and programmatic recommendations.

## ISSUES IN FERTILITY PREFERNCES AND UNMET NEED

### Fertility Preferences

Unmet need for family planning has been defined essentially as the percentage of married women of reproductive age who are not using any method of family planning but who would like to postpone the next pregnancy (unmet need for spacing) or do not want any more children (unmet need for limiting) (Westoff 1988). Thus an important aspect of unmet need is fertility preferences, reflecting motivation for avoiding pregnancy.

In examining fertility preferences or demand for fertility control, one of the most pertinent issues that needs to be considered is that of measurement (Bulatao and Lee 1983). There are several ways of measuring fertility preferences, using survey data. These include asking about ideal/desired family size, whether recent births were wanted or unwanted, and whether the respondent wants to continue with childbearing (Bongaarts 1990). Among these, questions on desire for additional births are considered to be the least biased (Pritchett 1994). This measure is therefore used in this study.

### Unmet Need

This study uses the "Westoff-Ochoa/DHS method" of measuring unmet need, also known as the "core definition method" (Westoff 1988). Nonetheless, other concepts related to

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measuring unmet need have been raised. These include the need for a wider definition, whose unmet need, and the causes of unmet need (Dixon-Mueller and Germain 1992; Pritchett 1994; Jain 1999).

The process of estimating unmet need according to the core definition is outlined in the following algorithm (Robey et al. 1996; Westoff 2006):

- Step 1: Contraceptive Use Status: Consider the universe of all married women of reproductive age; from these determine the percentage not using contraception.

- Step 2: Pregnancy and Amenorrheic Status: From the group selected in 1 above, determine the percentages of those pregnant or amenorrheic, and the percentage of those not pregnant or not amenorrheic.

- Step 3: For both groups selected in 2 above, consider the wantedness of pregnancy, and fecundity status. Calculate the percentages for the three groups now developed (pregnancy mistimed, pregnancy unwanted, fecund).

- Step 4: For the fecund group identified in 3 above, consider future fertility intentions. Calculate the percentages of those who want to postpone childbearing (want later/spacers) and those who want to limit (want no more children/limiters).

- Step 5: Consider again the groups identified in step 3 (pregnancy mistimed, pregnancy unwanted) and 4 (proportion among those fecund who want childbearing later, and want no more) above. Calculate the percentage who have unmet need for spacing and limiting, respectively.

- Step 6: Sum the four groups of percentages in 5 to determine the total unmet need.

**Empirical Findings**

A number of studies conducted on unmet need in the recent past are relevant to this paper. As mentioned, unmet need in Kenya declined between 1993 and 1998 but has remained at around 25% since then, as measured in the 2003 KDHS (Westoff and Cross 2006; Khan et al. 2007). This constant trend in unmet need between 1998 and 2003 was true across a number of differentials—spacing or limiting births, urban or rural residence, educational status, and region of residence. While these observations hold for most provinces, unmet need declined in the Coast province but increased in Nyanza province (associated with relatively higher prevalence of HIV/AIDS in that province).

A recent study conducted in neighbouring Uganda identified a number of factors associated with unmet need for family planning (Khan et al. 2008). These include marital status, number of living children, rural residence, and residence in the northern part of the country. The study concluded that even slight reductions in unmet need are likely to result in increased contraceptive use rates and reduced fertility.

Other studies have examined the reasons behind unmet need for contraception in developing countries (Sedgh et al. 2008). The idea of unmet need for family planning has been mentioned as one of the indicators of the millennium development goals (MDGs). New research findings show several reasons for unmet need. They include concerns about side effects and the perception among some women that they are not at risk of getting pregnant. Intention to use a family planning method is, in particular, low among

women who cite health concerns and side effects. Given these findings, it would appear that family planning services could do much to remove these barriers to contraceptive use with better information and services.

New estimates and analysis of unmet need and potential demand for family planning in developing countries show that in a number of countries in sub-Saharan Africa many women with unmet need for family planning have never used family planning services and do not intend to use any contraceptive method in the future (Khan et al. 2007). Compared to other regions of the world, total unmet need is higher in sub-Saharan Africa than other regions, and much less of the demand for family planning is being met in the sub-continent. In sub-Saharan Africa an average of 43% of total potential demand for family planning is met compared with 71% in other developing regions (Westoff 2006).

## DATA AND METHODS

**Data**

Three data sets are used for this study: the Kenya Demographic and Health Surveys (KDHS) for 1993, 1998, and 2003. The study uses both descriptive statistics and multivariate regression methods. For the descriptive statistics, the estimates were developed separately for each dataset. For the regression models however, the three datasets were pooled into one. In linking the three datasets, this study relied on the comparability of the relevant questions in the three surveys.

Reflecting the focus of this study on  unmet need among married women, respondents who at the time of each survey were not married or not living with a partner

were excluded from analysis. This approach gave rise to a sub-sample of 4625, 4834, and 4702 married women of reproductive age for the 1993, 1998, and 2003 surveys, respectively. In the 2003 survey, women from the North-Eastern province as well as from some districts of Rift valley and Eastern provinces (regions that had not been covered by the national sampling frame in the previous two surveys) were sampled and interviewed. In the descriptive analysis, as in the pooled multivariate analysis, data from these regions were excluded.

**Methods**

Descriptive analysis involved examining the trends and differentials in unmet need over time; they also comprised assessing the reasons for non-use of family planning methods by unmet need. Multivariate analysis consisted of two parts, with the first being a multinomial logistic regression in which unmet need—for spacing, limiting, and no need—was the dependent variable. In the second, a binary logistic regression of total unmet need on the same covariates was performed. Multivariate analysis involved regression of unmet need on 13 covariates. These were: survey year, women's age, educational level, residence, religion, current work status, household wealth, region of residence, number of living children, exposure to media, communication between partners about family planning, knowledge of a source of family planning methods, and contact with health services. Contact with the health services provider is defined as the proportion of women (at the community or cluster level) who reported having visited an ante-natal clinic (and having received a talk) for their last birth in the five years before

the survey. All results, for descriptive statistics as well as for multivariate analysis, are weighted.

The effects of survey year and a number of policy and program variables are of particular interest in this study, which focuses on program responses to unmet need. Interactions were therefore made between survey year and several independent variables, including household wealth and the number of living children. Since these two variables did not vary significantly from one survey to another, however, the interaction terms were dropped from the models. However, the effects of interactions with specific program variables in the different surveys—that is, contact with antenatal care services and knowledge of source of a modern contraceptive method—were retained in the final regression models.

**RESULTS**

**Trends in Unmet Need**

The distribution of unmet need over time is shown in Table 1. Both the unmet need for spacing and for limiting declined from 1993 to 1998. Nevertheless, as observed in other studies (CBS et al. 2004; Westoff and Cross 2006), unmet need was constant between 1998 and 2003, at 24% in 1998 and 25% in 2003. In each of the surveys unmet need for spacing is higher than that for limiting.

A similar trend is observed for current use of contraceptive methods. In 1993 current use of family planning methods was 33%, increased to 39% in 1998, but then was only slightly higher in 2003, at 41%. The percentage using contraception for limiting births is always greater than that for spacing.

The sum of the percentage of currently married women using contraception and the percentage with an unmet need equals the total potential demand for family planning(Westoff 1988; Westoff 2006). As Table 1 shows, total demand decreased slightly from 68% in 1993 to 63% in 1998 but rose to 66% in 2003. Three other rows in Table 1 are important. These are the percentage of total demand that is satisfied, unmet need for modern methods, and the percentage of total demand that is satisfied by modern methods. As Table 1 indicates, while the total demand for family planning increased from 48% in 1993 to 62% in 1998, it remained at the same level thereafter, measured in 2003.

Unmet need for modern methods is obtained by adding the total unmet need and the percent using traditional methods (Westoff 2006; Khan et al. 2008). While decreasing by 10%, from 41% in 1993 to 31.4% in 1998, unmet need for modern methods increased only marginally between 1998 and 2003, by about 2%. The percent of total potential demand satisfied by modern methods (which is obtained by dividing the percent of current use for modern methods by the total demand) also remained virtually constant between 1998 and 2003. Total demand satisfied by modern methods in 1993 was 40%, it increased to 50% in 1998, and remaining at the same level in 2003.

**Table 1: Trends in the percentage of currently married women with unmet need, Kenya 1993-2003**

| Year | 1993 | 1998 | 2003 |
|---|---|---|---|
| **Type of Need** | | | |
| *Unmet Need* | | | |
| Spacing | 21.4 | 14.0 | 14.5 |
| Limiting | 14.1 | 9.9 | 10.4 |
| Total | 35.5 | 23.9 | 24.9 |
| *Current Use* | | | |
| Spacing | 9.9 | 13.4 | 14.9 |
| Limiting | 22.9 | 25.6 | 26.2 |
| Total | 32.8 | 39.0 | 41.1 |
| **Total demand** | 68.3 | 62.8 | 66.0 |
| | | | |
| **Percent of total demand satisfied** | 48.0 | 62.0 | 62.2 |
| | | | |
| **Unmet need for modern methods** | 41.0 | 31.4 | 33.1 |
| **Using a modern method** | 27.3 | 31.5 | 32.9 |
| **Percent of total demand satisfied by modern methods** | 40.0 | 50.1 | 49.9 |
| | | | |
| **N** | 4, 625 | 4, 834 | 4, 702 |

**Differentials in Unmet Need**

Table 2 shows the distribution of unmet need for spacing and for limiting among the different socio-demographic groups over time. For each survey year, total unmet need decreases with women's age. For example, among married women age 15 to 19 in 1993, total unmet need is 42%, while among the oldest age group, 45 to 49, it is 14%. Between 1993 and 1998 total unmet need declined substantially among all age groups and then changed hardly at all between 1998 and 2003 for most age groups, with the exception of women age 45-49, whose total unmet need increased considerably between 1998 and 2003. The same general trend is observed for unmet need for spacing, which is always higher than that for limiting in every age group. While total unmet need and unmet need

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for spacing decrease monotonically with age, unmet need for limiting first increases with age to reach a peak at age 35-39, and then decreases gradually at older ages. For women below age 35, unmet need for spacing exceeds unmet need for limiting, while among women over 35 the unmet need for limiting is greater than for spacing.

By educational level, total unmet need for each survey year is greater among women with a primary education than among women with no education, but then decreases among women with a secondary or higher education. The same pattern is true of unmet need for spacing, while unmet need for limiting decreases as women's level of education increases. Total unmet need decreases for each educational level from 1993 to 1998 and then levels off between 1998 and 2003. The same is generally also true of unmet need for spacing and limiting.

For each survey year, unmet need (total, spacing, and limiting) is higher in rural areas than in urban areas. The trends over time are also similar to those for unmet need by education and age. Trends in unmet need for women's religion also are similar to other variables. The differences between the categories of religion by unmet need are not significant. This is unlike associations between education, age, as well as residence and unmet need, which are highly significant (at $p<0.001$). .

For all the three survey years, there is little difference in unmet need by women's work status, particularly for 1998 and 2003. However, the difference is large among different categories of household wealth. The lower the economic status of the household, the higher the unmet need (for spacing, for limiting, and total unmet need). In addition, women who have been recently exposed to family planning messages in the media also have a lower unmet need compared with those with no exposure.

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Total unmet need also increases with the number of living children. This is equally true for unmet need for limiting. However, unmet need for spacing decreases with number of living children beyond parity two. In the 2003 KDHS, women who discussed family planning with their partner were more likely to have unmet need for family planning. Although the same pattern can be observed among women interviewed in the 1993 survey, the reverse is true for 1998. For respondents in the 1998 survey, women who have an unmet need and have discussed the subject of family planning with their partners constitute a marginally lower percentage as compared to their counterparts who had no discussion with their spouses.

In 2003, total unmet need was highest in Nyanza province. However in 1998 as well as 1993, it was highest in Western province. In all the three years, total unmet need was lowest, surprisingly, not in an urban area such as Nairobi city, but in Central province. This corresponds with the high contraceptive prevalence observed in Central province (Westoff and Cross 2006).

**Table 2: Differentials in unmet need among currently married women in Kenya, 1993-2003**

| | 1993 | | | 1998 | | | 2003 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Spacing | Limiting | Total | Spacing | Limiting | Total | Spacing | Limiting | Total |
| **Age** | | | | | | | | | |
| 15-19 | 37.5 | 4.4 | 41.9 | 24.5 | 2.2 | 26.7 | 27.1 | 1.3 | 28.4 |
| 20-24 | 35.2 | 5.0 | 40.2 | 24.1 | 4.4 | 28.5 | 28.2 | 5.0 | 33.2 |
| 25-29 | 28.2 | 11.4 | 39.6 | 19.4 | 7.6 | 27.1 | 17.0 | 7.0 | 24.0 |
| 30-34 | 18.7 | 16.4 | 35.1 | 12.7 | 11.4 | 24.2 | 12.8 | 14.6 | 27.4 |
| 35-39 | 11.5 | 27.5 | 39.0 | 6.2 | 17.9 | 24.1 | 6.2 | 17.1 | 23.3 |
| 40-44 | 4.9 | 22.0 | 26.9 | 2.4 | 16.3 | 18.6 | 2.2 | 15.4 | 17.6 |
| 45-49 | 2.2 | 11.8 | 14.0 | 0.4 | 6.1 | 6.5 | 0.6 | 11.9 | 12.5 |
| **Education** | | | | | | | | | |
| None | 17.0 | 18.2 | 35.1 | 9.5 | 15.1 | 24.7 | 11.3 | 12.3 | 23.6 |
| Primary | 24.7 | 14.3 | 39.1 | 17.2 | 10.7 | 27.8 | 18.1 | 12.3 | 30.4 |
| Secondary+ | 17.3 | 9.3 | 26.6 | 9.6 | 5.6 | 15.2 | 7.8 | 5.4 | 13.2 |
| **Residence** | | | | | | | | | |
| Urban | 15.1 | 9.7 | 24.8 | 10.0 | 7.2 | 17.2 | 10.9 | 6.5 | 17.3 |
| Rural | 22.5 | 14.9 | 37.4 | 15.0 | 10.6 | 25.6 | 15.6 | 11.6 | 27.1 |
| **Religion** | | | | | | | | | |
| Catholic | 19.8 | 16.0 | 35.7 | 13.3 | 9.6 | 22.9 | 14.8 | 11.2 | 26.0 |
| Protestant | 22.1 | 14.1 | 36.2 | 13.9 | 10.4 | 24.3 | 14.0 | 10.3 | 24.3 |
| Muslim | 22.8 | 8.3 | 31.1 | 19.3 | 7.5 | 26.8 | 17.4 | 8.4 | 25.8 |
| Other | 22.1 | 9.3 | 31.4 | 11.8 | 6.9 | 18.6 | 17.6 | 10.2 | 27.8 |
| **Currently Working** | | | | | | | | | |
| No | 24.3 | 14.0 | 38.4 | 14.5 | 10.0 | 24.5 | 16.1 | 9.7 | 25.7 |
| Yes | 19.0 | 14.2 | 33.2 | 13.6 | 9.9 | 23.4 | 13.7 | 10.8 | 24.4 |
| **HH Wealth Quintile** | | | | | | | | | |
| Low | 26.9 | 17.5 | 44.3 | 23.8 | 13.8 | 37.5 | 20.5 | 15.4 | 35.9 |
| Second | 25.0 | 16.0 | 41.0 | 16.8 | 11.3 | 28.1 | 16.4 | 14.4 | 30.8 |
| Third | 22.9 | 15.6 | 38.5 | 12.5 | 8.5 | 21.1 | 15.4 | 11.3 | 26.7 |
| Fourth | 19.4 | 12.6 | 32.0 | 9.9 | 10.0 | 19.9 | 10.0 | 7.5 | 17.5 |
| Fifth | 13.3 | 9.3 | 22.6 | 6.7 | 5.9 | 12.5 | 11.6 | 5.4 | 17.0 |

**(Cont'd)**

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**Table 2 – cont'd**

| | 1993 | | | 1998 | | | 2003 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Spacing | Limiting | Total | Spacing | Limiting | Total | Spacing | Limiting | Total |
| **Exposure to FP Messages** | | | | | | | | | |
| No | 22.8 | 15.0 | 37.8 | 15.3 | 11.7 | 27.0 | 16.8 | 12.7 | 29.5 |
| Yes | 17.5 | 11.8 | 29.2 | 11.4 | 6.3 | 17.7 | 9.2 | 5.4 | 14.5 |
| **# of Living Children** | | | | | | | | | |
| 0-1 | 25.7 | 2.9 | 28.6 | 15.9 | 1.3 | 17.3 | 17.4 | 1.0 | 18.4 |
| 2-3 | 29.0 | 7.6 | 36.6 | 17.9 | 6.1 | 24.0 | 17.7 | 6.0 | 23.7 |
| 4-5 | 21.6 | 17.0 | 38.6 | 12.3 | 11.9 | 24.2 | 10.7 | 16.0 | 26.7 |
| 6+ | 9.4 | 27.2 | 36.6 | 7.6 | 22.3 | 29.9 | 8.9 | 25.0 | 33.9 |
| **Region** | | | | | | | | | |
| Nairobi | 16.8 | 9.2 | 26.0 | 8.6 | 4.1 | 12.6 | 12.5 | 3.5 | 16.0 |
| Central | 11.9 | 13.0 | 24.9 | 5.4 | 5.7 | 11.1 | 6.1 | 5.2 | 11.4 |
| Coast | 24.9 | 7.5 | 32.4 | 19.6 | 10.2 | 29.8 | 16.2 | 8.7 | 25.0 |
| Eastern | 23.2 | 17.5 | 40.7 | 11.1 | 10.5 | 21.6 | 10.6 | 11.1 | 21.7 |
| Nyanza | 22.8 | 14.7 | 37.5 | 15.6 | 10.8 | 26.4 | 20.5 | 14.2 | 34.7 |
| Rift Valley | 21.2 | 14.9 | 36.1 | 15.8 | 11.2 | 27.0 | 15.6 | 12.4 | 27.9 |
| Western | 25.6 | 15.5 | 41.1 | 19.7 | 12.7 | 32.4 | 19.3 | 12.7 | 32.1 |
| **Partner Communication on FP** | | | | | | | | | |
| No | 22.5 | 13.7 | 36.2 | 14.7 | 10.0 | 24.7 | 13.3 | 9.5 | 22.9 |
| Yes | 22.8 | 15.5 | 38.3 | 13.7 | 9.9 | 23.6 | 15.2 | 10.9 | 26.2 |
| **Total (%)** | 21.4 | 14.1 | 35.5 | 14.0 | 9.9 | 23.9 | 14.5 | 10.4 | 24.9 |

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**Reasons for Non-Use of Contraception among Women with Unmet Need**

The study also examined the factors which might make women who have an unmet need not use family planning methods. Three observations can be deduced from the "Total" row at the bottom of Table 3. First, the percentage of women with unmet need citing fertility-related reasons for non-use of family planning methods decreased substantially from 31% in 1993 to 11% in 1998, but the decrease was much less between 1998 and 2003 (from 11% to 9%). Second, the percentage citing method-related reasons for not using family planning methods increased considerably over the three years, rising from 41% in 1993 to 46% in 1998 and reaching 54% by 2003. Third, the percentage citing opposition to family planning as a reason for not using family planning methods first rose, then levelled off. In 1993, 24% of women with unmet need cited opposition as a reason for non-use, increasing to 38% in 1998 and remaining at about this level (37%) in 2003.

From among all the cross-tabulations of reasons for non-use of family planning, only a few yielded significant Pearson correlation results. For 1993 these were religion (p=0.008) and discussion between partners about family planning (p=0.03); for 1998: current work status (p=0.02); and for 2003: age (p=0.02) and religion (p=0.007). In 1993, 39% of Catholics cited fertility related reasons for non-use of family planning services; by 2003 this had decreased to 12%, and the trend was similar among Protestants and Muslims.

A reverse trend is observed for non-use due to method-related reasons and opposition to family planning. When women are classified by work status in 1998, method-related and opposition reasons are the most commonly cited for non-use of

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family planning methods. The grouping of married women with an unmet need who were surveyed in 2003 by age group and reason for non use of contraceptive methods provides further insight into the patterns. For the youngest reproductive age group (15-19), opposition to family planning (possibly to be interpreted as being at the beginning of childbearing and hence limited use of family planning methods) is the main reason for non-use. For the next age group (20-24), both opposition to family planning and method-related reasons predominate as reasons for non-use. Beyond age 24, reasons related to the method (health concerns and fear of side effects) are increasingly mentioned for non-use.

The results in Table 3 also show that working women with unmet need are more likely than their non-working counterparts to report method-related reasons. They are also more likely to report opposition to family planning as reasons for non-use. Similarly, a greater percentage of women in urban areas than in rural areas cite method-related reasons for non-use of a family planning method. The same is true of the highest income group, residence in Nairobi city, partner communication about family planning, and recent exposure to family planning messages in the mass media.

**Table 3: Reasons for non-use of contraception among currently married women with an unmet need, Kenya 1993-2003**

| | 1993 | | | | 1998 | | | | 2003 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Fertility related | Method related | Opposition | Other | Fertility related | Method related | Opposition | Other | Fertility related | Method related | Opposition | Other |
| **Age** | | | | | | | | | | | | |
| 15-19 | 70.1 | 2.1 | 27.8 | 0.0 | 6.9 | 36.5 | 47.6 | 9.1 | 18.0 | 14.2 | 67.8 | N/A |
| 20-24 | 35.2 | 45.5 | 17.7 | 1.6 | 5.4 | 42.6 | 44.1 | 5.6 | 4.3 | 47.9 | 47.8 | N/A |
| 25-29 | 20.2 | 42.0 | 29.9 | 8.0 | 14.6 | 42.4 | 41.2 | 0.0 | 8.2 | 55.3 | 36.5 | N/A |
| 30-34 | 36.6 | 31.4 | 26.1 | 6.0 | 12.0 | 44.6 | 43.4 | 0.0 | 3.9 | 63.3 | 32.8 | N/A |
| 35-39 | 21.1 | 48.1 | 27.8 | 3.0 | 8.1 | 48.3 | 40.2 | 3.4 | 7.1 | 53.8 | 39.1 | N/A |
| 40-44 | 32.9 | 48.3 | 18.7 | 0.0 | 11.5 | 52.4 | 28.1 | 8.0 | 22.3 | 51.6 | 26.1 | N/A |
| 45-49 | 35.4 | 35.3 | 24.6 | 4.8 | 30.3 | 46.1 | 10.9 | 12.8 | 9.6 | 77.8 | 12.7 | N/A |
| **Education** | | | | | | | | | | | | |
| None | 30.1 | 39.4 | 26.5 | 4.0 | 19.1 | 42.8 | 33.2 | 4.8 | 15.7 | 37.8 | 46.5 | N/A |
| Primary | 30.5 | 43.6 | 22.4 | 3.6 | 6.0 | 45.9 | 43.1 | 4.4 | 7.9 | 55.4 | 36.7 | N/A |
| Secondary+ | 35.1 | 36.8 | 25.8 | 2.4 | 18.2 | 47.9 | 28.8 | 3.0 | 7.4 | 67.3 | 25.3 | N/A |
| **Residence** | | | | | | | | | | | | |
| Urban | 26.3 | 52.0 | 20.7 | 1.0 | 14.6 | 40.5 | 45.0 | 0.0 | 12.7 | 48.2 | 39.1 | N/A |
| Rural | 31.8 | 39.4 | 24.8 | 4.0 | 10.7 | 46.4 | 37.0 | 5.1 | 8.7 | 54.5 | 36.8 | N/A |
| **Religion** | | | | | | | | | | | | |
| Catholic | 38.5 | 42.4 | 19.1 | 0.0 | 17.3 | 48.9 | 30.5 | 3.4 | 11.5 | 50.2 | 38.3 | N/A |
| Protestant | 23.4 | 43.6 | 28.5 | 4.6 | 9.1 | 46.3 | 38.8 | 4.8 | 5.4 | 61.5 | 33.1 | N/A |
| Muslim | 25.5 | 37.9 | 25.4 | 11.2 | 9.3 | 43.1 | 47.7 | 0.0 | 13.9 | 37.8 | 48.3 | N/A |
| Other | 58.5 | 25.2 | 13.4 | 2.9 | 17.2 | 17.2 | 54.9 | 10.8 | 37.7 | 9.3 | 53.0 | N/A |
| **Currently Working** | | | | | | | | | | | | |
| No | 29.8 | 40.2 | 26.7 | 3.4 | 11.4 | 42.8 | 45.1 | 0.7 | 8.2 | 46.5 | 45.3 | N/A |
| Yes | 32.5 | 42.4 | 21.4 | 3.8 | 11.3 | 47.8 | 32.3 | 7.4 | 10.0 | 58.4 | 31.6 | N/A |
| **HH Wealth Quintile** | | | | | | | | | | | | |
| Low | 34.6 | 36.4 | 27.2 | 1.9 | 10.9 | 46.2 | 34.3 | 7.5 | 10.4 | 54.6 | 34.9 | N/A |
| Second | 35.0 | 51.1 | 11.6 | 2.4 | 12.4 | 42.3 | 42.2 | 3.1 | 10.9 | 57.9 | 31.2 | N/A |
| Third | 28.6 | 37.5 | 28.5 | 5.5 | 5.2 | 47.0 | 46.5 | 1.4 | 8.9 | 49.2 | 41.9 | N/A |
| Fourth | 19.8 | 39.7 | 34.9 | 5.6 | 15.2 | 46.4 | 36.4 | 2.0 | 6.2 | 54.0 | 39.8 | N/A |
| Fifth | 37.6 | 40.2 | 19.2 | 2.9 | 14.3 | 45.2 | 34.3 | 4.1 | 6.7 | 47.2 | 46.1 | N/A |

(Cont'd)

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**Table 3 – cont'd**

| | 1993 | | | | 1998 | | | | 2003 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Fertility related | Method related | Opposition | Other | Fertility related | Method related | Opposition | Other | Fertility related | Method related | Opposition | Other |
| **Exposure to FP Messages** | | | | | | | | | | | | |
| No | 30.3 | 39.4 | 25.9 | 4.4 | 9.6 | 45.6 | 38.9 | 5.0 | 8.0 | 52.7 | 39.3 | N/A |
| Yes | 34.8 | 49.3 | 15.9 | 0.0 | 16.8 | 45.5 | 35.4 | 2.2 | 17.8 | 59.5 | 22.8 | N/A |
| **# of Living Children** | | | | | | | | | | | | |
| 0-1 | 46.4 | 30.0 | 18.8 | 4.8 | 6.6 | 39.4 | 46.9 | 7.0 | 18.6 | 29.4 | 52.0 | N/A |
| 2-3 | 37.8 | 40.3 | 17.8 | 4.0 | 16.2 | 32.9 | 45.6 | 3.3 | 3.4 | 63.1 | 33.5 | N/A |
| 4-5 | 30.8 | 39.1 | 26.4 | 3.7 | 11.8 | 44.7 | 38.8 | 4.7 | 12.0 | 52.7 | 25.3 | N/A |
| 6+ | 19.6 | 48.0 | 29.6 | 2.7 | 8.0 | 58.4 | 29.4 | 4.2 | 7.9 | 58.6 | 33.5 | N/A |
| **Region** | | | | | | | | | | | | |
| Nairobi | 7.1 | 78.6 | 14.3 | 0.0 | 0.0 | 50.0 | 50.0 | 0.0 | 0.0 | 64.5 | 35.5 | N/A |
| Central | 35.4 | 34.5 | 26.3 | 3.8 | 6.9 | 36.9 | 56.2 | 0.0 | 6.8 | 47.6 | 45.6 | N/A |
| Coast | 34.4 | 26.6 | 29.5 | 9.5 | 16.9 | 33.7 | 49.4 | 0.0 | 5.2 | 43.9 | 50.9 | N/A |
| Eastern | 25.7 | 51.8 | 18.4 | 4.1 | 21.1 | 62.4 | 16.5 | 0.0 | 18.4 | 60.1 | 21.6 | N/A |
| Nyanza | 43.3 | 32.1 | 21.3 | 3.3 | 6.6 | 49.9 | 30.4 | 13.1 | 8.2 | 60.9 | 31.0 | N/A |
| Rift Valley | 29.0 | 41.5 | 28.0 | 1.5 | 10.6 | 46.8 | 38.0 | 2.7 | 9.0 | 45.9 | 45.2 | N/A |
| Western | 30.0 | 46.1 | 23.9 | 0.0 | 13.2 | 43.9 | 37.1 | 5.7 | 10.4 | 60.8 | 28.8 | N/A |
| **Partner Communication on FP** | | | | | | | | | | | | |
| No | 26.3 | 39.6 | 30.3 | 3.8 | 11.9 | 42.6 | 40.9 | 3.3 | 12.5 | 45.7 | 41.8 | N/A |
| Yes | 37.5 | 43.9 | 15.4 | 3.3 | 10.7 | 48.5 | 35.5 | 5.3 | 5.8 | 62.1 | 32.1 | N/A |
| **Total (%)** | 31.0 | 41.2 | 24.2 | 3.6 | 11.3 | 45.5 | 38.3 | 4.3 | 9.3 | 53.6 | 37.1 | N/A |

**Multivariate Results**

*Program Variables*

The logistic (odds ratio) regression results presented in the last set of columns in Table 4 below show that a number of covariates are significantly related to total unmet need. Without excluding any categories, these are women's age, education, current work status, household wealth, exposure to media messages on family planning, partner discussion about family planning, residence in Central province, number of living children, and contact with health services. It is most instructive to start with the program variables— contact with health services and knowledge of a source of modern methods of family planning. Married women living in a community which has greater contact with health providers (antenatal care providers) have much greater unmet need for family planning; the results are highly significant (p<0.001)[1].

This finding is unexpected. It is possible that for women who have not had previous contact with health care providers such an encounter generates interest in and potential demand for family planning.  But, if their need is not met by the family planning program, then these women have unmet need. Contact with health providers is strongly positively associated with unmet need for spacing and unmet need for limiting.

The interaction of year of survey and contact with health services also brings out interesting results: it is during the year 2003 relative to 1993 (but not in 1998) that contact with health services led to a significant reduction in unmet need. Thus, the results

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[1] While in 1993 the odds ratio was 3.5 with a confidence interval of between 1.9 and 6.6, in 1998 this increased to 4.0 (CI:  2.7 - 6.0), and declined further to 3.0 in 2003 (CI: 1.8 - 4.8).

show that contact with health providers significantly reduced unmet need over the whole period 1993-2003, with the results for 1998 relative to 1993 are non-significant.

Unlike contact with antenatal care provides, knowledge of a source of a modern family planning method is not significant at the 5% level; nor is its interaction with time.


*Other Covariates*

Beginning with age group 25-29, increasing age is associated with a progressive decrease in total unmet need; these results are highly significant (at the 0.1% level). Age group 25-29 (relative to age 15-19) is associated with a 47% decrease in total unmet need, while the oldest reproductive age group (45-49) is associated the much greater decrease of 93%.

Having been educated up to primary level is associated with a significant increase (16%) in total unmet need for family planning; this relationship is consistent with earlier findings in Kenya (Westoff 2006). Similarly, secondary or higher level of education is associated with a significant reduction in total unmet need by 21%. Similarly, currently working is associated with a marginally significant (5%) decrease in total unmet need of 11%.

Household wealth is significantly associated with decrease in total unmet need; so is exposure to mass media family planning messages. Conversely, the number of living children is strongly positively associated (significant at 0.1%) with total unmet need. While having 2-3 living children (relative to 0-1) is associated with a two-fold increase in total unmet need, having six or more children is associated with a more than six-fold (6.5) increase in total unmet need.

Effects of other covariates on unmet need for spacing and limiting are generally similar to those for total unmet need, with the notable exception of urban/rural residence. Living in an urban area is significantly and positively associated with unmet need for spacing but significantly and negatively associated with unmet need for limiting. In other words, residence in urban areas is associated with reduced unmet need for limiting births, implying that family planning for limitation is more likely to be practised in urban areas.

**Table 4: Results of logit regression of unmet need on covariates, Kenya 1993-2003**

| | Multinomial Logit Model | | | | Binary Logit Model | |
|---|---|---|---|---|---|---|
| | Unmet need spacing/No need (RRR) | | Unmet need limiting/No need (RRR) | | Total unmet need/No need (OR) | |
| **Age** | | | | | | |
| 15-19 [R] | 1.00 | | 1.00 | | 1.00 | |
| 20-24 | 0.90 | ( 0.74 , 1.09 ) | 1.04 | ( 0.52 , 2.10 ) | 0.87 | ( 0.72 , 1.06 ) |
| 25-29 | 0.52 *** | ( 0.41 , 0.66 ) | 0.91 | ( 0.46 , 1.82 ) | 0.53 *** | ( 0.42 , 0.66 ) |
| 30-34 | 0.31 *** | ( 0.24 , 0.40 ) | 0.94 | ( 0.46 , 1.91 ) | 0.37 *** | ( 0.29 , 0.48 ) |
| 35-39 | 0.14 *** | ( 0.10 , 0.20 ) | 1.02 | ( 0.50 , 2.08 ) | 0.29 *** | ( 0.22 , 0.38 ) |
| 40-44 | 0.05 *** | ( 0.03 , 0.07 ) | 0.68 | ( 0.33 , 1.37 ) | 0.17 *** | ( 0.13 , 0.22 ) |
| 45-49 | 0.01 *** | ( 0.01 , 0.03 ) | 0.30 ** | ( 0.14 , 0.64 ) | 0.07 *** | ( 0.05 , 0.10 ) |
| **Education** | | | | | | |
| None [R] | 1.00 | | 1.00 | | 1.00 | |
| Primary | 1.14 | ( 0.94 , 1.40 ) | 1.12 | ( 0.92 , 1.35 ) | 1.16 * | ( 1.00 , 1.33 ) |
| Secondary+ | 0.79 | ( 0.61 , 1.02 ) | 0.74 * | ( 0.57 , 0.95 ) | 0.79 * | ( 0.65 , 0.96 ) |
| **Residence** | | | | | | |
| Urban [R] | 1.00 | | 1.00 | | 1.00 | |
| Rural | 1.28 * | ( 1.02 , 1.60 ) | 0.62 *** | ( 0.47 , 0.82 ) | 0.97 | ( 0.82 , 1.16 ) |
| **Religion** | | | | | | |
| Catholic [R] | | | | | | |
| Protestant | 1.01 | ( 0.88 , 1.15 ) | 0.97 | ( 0.84 , 1.14 ) | 0.99 | ( 0.89 , 1.11 ) |
| Muslim | 1.03 | ( 0.79 , 1.36 ) | 0.85 | ( 0.61 , 1.18 ) | 0.97 | ( 0.77 , 1.21 ) |
| Other | 0.81 | ( 0.58 , 1.11 ) | 0.71 | ( 0.46 , 1.08 ) | 0.77 * | ( 0.59 , 1.00 ) |
| **Curently Working** | | | | | | |
| No [R] | 1.00 | | 1.00 | | 1.00 | |
| Yes | 0.91 | ( 0.81 , 1.02 ) | 0.86 * | ( 0.73 , 1.00 ) | 0.89 * | ( 0.80 , 0.98 ) |

**(Cont'd)**

**Table 4 – cont'd**

| | Multinomial Logit Model | | Binary Logit Model |
| --- | --- | --- | --- |
| | Unmet need spacing/No need (RRR) | Unmet need limiting/No need (RRR) | Total unmet need/No need (OR) |
| **HH Wealth Quintile** | | | |
| Low[R] | 1.00 | 1.00 | 1.00 |
| Second | 0.77 ** ( 0.65 , 0.92 ) | 0.93 ( 0.77 , 1.12 ) | 0.84 * ( 0.73 , 0.97 ) |
| Third | 0.76 ** ( 0.64 , 0.90 ) | 0.79 * ( 0.64 , 0.98 ) | 0.77 ** ( 0.67 , 0.90 ) |
| Fourth | 0.65 *** ( 0.52 , 0.80 ) | 0.72 ** ( 0.57 , 0.90 ) | 0.67 *** ( 0.57 , 0.80 ) |
| Fifth | 0.56 *** ( 0.43 , 0.72 ) | 0.66 ** ( 0.49 , 0.89 ) | 0.59 *** ( 0.48 , 0.73 ) |
| **Exposure to FP Messages** | | | |
| No[R] | 1.00 | 1.00 | 1.00 |
| Yes | 0.84 * ( 0.73 , 0.96 ) | 0.82 * ( 0.68 , 0.98 ) | 0.83 ** ( 0.74 , 0.94 ) |
| **# of Living Children** | | | |
| 0-1[R] | 1.00 | 1.00 | 1.00 |
| 2-3 | 1.82 *** ( 1.55 , 2.14 ) | 4.61 *** ( 3.10 , 6.85 ) | 2.08 *** ( 1.78 , 2.43 ) |
| 4-5 | 2.23 *** ( 1.81 , 2.76 ) | 11.53 *** ( 7.64 , 17.39 ) | 3.42 *** ( 2.85 , 4.10 ) |
| 6+ | 3.17 *** ( 2.40 , 4.17 ) | 23.93 *** ( 15.62 , 36.67 ) | 6.45 *** ( 5.15 , 8.07 ) |
| **Region** | | | |
| Nairobi[R] | 1.00 | 1.00 | 1.00 |
| Central | 0.39 ( 0.26 , 0.58 ) | 1.13 ( 0.69 , 1.84 ) | 0.60 ** ( 0.44 , 0.83 ) |
| Coast | 1.03 ( 0.75 , 1.45 ) | 1.17 ( 0.73 , 1.88 ) | 1.12 ( 0.84 , 1.49 ) |
| Eastern | 0.73 ( 0.51 , 1.03 ) | 1.56 ( 0.98 , 2.50 ) | 0.99 ( 0.73 , 1.33 ) |
| Nyanza | 0.93 ( 0.66 , 1.32 ) | 1.76 * ( 1.09 , 2.83 ) | 1.19 ( 0.89 , 1.60 ) |
| Rift Valley | 0.81 ( 0.58 , 1.12 ) | 1.45 ( 0.91 , 2.32 ) | 1.01 ( 0.76 , 1.35 ) |
| Western | 0.99 ( 0.71 , 1.40 ) | 1.53 ( 0.95 , 2.48 ) | 1.17 ( 0.87 , 1.57 ) |
| **Partner Communication on FP** | | | |
| No[R] | 1.00 | 1.00 | 1.00 |
| Yes | 0.92 ( 0.81 , 1.04 ) | 1.07 ( 0.94 , 1.23 ) | 0.98 ( 0.89 , 1.08 ) |

(Cont'd)

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**Table 4 – cont'd**

| | Multinomial Logit Model | | Binary Logit Model |
| | Unmet need spacing/No need (RRR) | Unmet need limiting/No need (RRR) | Total unmet need/No need (OR) |
|---|---|---|---|
| **Year** | | | |
| 1993[R] | 1.00 | 1.00 | 1.00 |
| 1998 | 0.56 ( 0.54 , 0.73 ) | 1.03 ( 0.28 , 3.85 ) | 0.68 *** ( 0.30 , 1.54 ) |
| 2003 | 0.70 ( 0.50 , 0.68 ) | 1.42 ( 0.48 , 4.19 ) | 0.90 *** ( 0.45 , 1.79 ) |
| **Source** | 1.12 ( 0.54 , 2.32 ) | 1.94 ( 0.71 , 5.35 ) | 1.37 ( 0.75 , 2.51 ) |
| 1998 x Source | 0.94 ( 0.36 , 2.46 ) | 0.34 ( 0.09 , 1.27 ) | 0.64 ( 0.28 , 1.48 ) |
| 2003 x Source | 1.88 ( 0.78 , 4.59 ) | 0.78 ( 0.24 , 2.51 ) | 1.32 ( 0.62 , 2.81 ) |
| **Contact** | 3.54 *** ( 1.91 , 6.55 ) | 4.00 *** ( 2.69 , 5.96 ) | 2.95 *** ( 1.81 , 4.81 ) |
| 1998 x Contact | 1.42 ( 0.56 , 3.48 ) | 2.51 ( 0.90 , 4.62 ) | 1.85 ( 0.88 , 3.90 ) |
| 2003 x Contact | 0.37 *** ( 0.19 , 0.71 ) | 0.52 ( 0.26 , 7.01 ) | 0.44 ** ( 0.26 , 0.76 ) |
| **Number of cases** | 13, 432 | 13, 432 | 13, 432 |

Note: ***: $p<0.001$; **: $p<0.01$; *: $p<0.05$

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**DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS**

The findings from this study can be recapitulated in three principal observations. First, ccorresponding to the stall in fertility decline and contraceptive use, unmet need first declined between 1993 and 1998 but did not change much between 1998 and 2003. Second, unmet need for family planning remains high in Kenya (25% in 2003), and only 50% of the total potential demand for family planning is being satisfied by use of modern methods. Third, for each year of the survey, total unmet need and that for spacing decrease with women's age. However, unmet need for limiting first increases to a peak at age group 35-39 and then declines. At every age group, unmet need for limiting is smaller than that for spacing.

The study also identified several other salient differentials in unmet need. One interesting finding is that unmet need is higher among women with primary education than among women without any schooling. Previous studies (Westoff 2006) cite an initial increase in unmet need with education, which is due to a gap between increasing desire to control fertility and the ability to do so, leading to an eventual decline in unmet need with education, as more women use contraception. Total unmet need and unmet for spacing and for limiting all decrease as the level of household wealth increases. Unmet need is highest in Nyanza and Western provinces; it is lowest in Central province.

When unmet need for family planning methods is examined by reasons for non-use of family planning methods, what emerges is that concerns about side effects of contraceptive methods are most common among women who are more educated, who reside in urban areas, those working, and those in the highest wealth quintile households. Due to their better access to media and other sources of information, it is likely that these

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women would already be aware about reported side effects of specific family planning methods. This would call for a more specific type of counselling for these groups – counselling that would provide more details and scientific facts to match the level of sophistication and knowledge of the client.

The study finding that is most interesting is the relationship between unmet need and contacts with antenatal care services. Contact with health services increases unmet need for spacing, limiting as well as for total unmet need. Its interaction with time is however only significant for the 2003 survey year —and in the negative direction. These results lead to a focus on what may have happened to family planning program factors in Kenya between 1993 and 2003.

A review of the program effort in the Kenya family planning program in 1998 awarded an increased effort between 1994 and 1998 (Ross and Stover 2001). However, more recent inquiries mention two program factors that could be related to the levelling off in unmet need and contraceptive use. These are reduced Government and donor funding to the family planning program and the related increased emphasis on HIV/AIDS programs (Westoff and Cross 2006). Renewed effort to introduce family planning education during antenatal visits could also be related to the significance of contact with health services in determining unmet need.

These findings imply that contact with health providers creates more demand for family planning among married women. However, the fact that contact with health care providers is significantly associated with decreased total unmet need and unmet need for spacing over the entire period 1993-2003, but not for 1993-1998, might be a sign of the discordance between desire to control fertility and actually accessing the services. This

represents probable demand for family planning that remains for the most part unmet by the current family planning program. The implication is that, if programs could do more to provide women coming into contact with antenatal care services with family planning information and services, contraceptive prevalence would rise and unmet need would fall.

It is therefore recommended that efforts should be made to further reduce unmet need for family planning, especially for higher-parity women and women with lower socioeconomic status. Opportunities for provision of family planning services, particularly during ante-natal visits should be exploited to the full.

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