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## Determinants of Unmet Need for Family Planning among Women in Kenya: Insights from the 2022 Kenya Demographic and Health Survey

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# ABSTRACT

Unmet need for family planning remains a significant issue globally, including Kenya, where an estimated 10% of married women want to stop or delay childbearing but do not use contraception. Although Kenya has set a target to eliminate unmet need by 2030, a substantial unmet need persists, with 14% of currently married women lacking access to the family planning services they desire. This study aimed to assess the factors that contribute to the unmet need for family planning among women in Kenya. Specifically, the study examined the sociodemographic characteristics associated with unmet need, the role of women's contraceptive knowledge and use, and the impact of access to health care services and availability of contraceptive methods. Data were drawn from the nationally representative 2022 Kenya Demographic and Health Survey. The analysis revealed that a higher proportion of women in the youngest (15–19) and oldest (45–49) age groups experienced unmet need for family planning with the youngest at 22.4% (95% confidence interval [CI]: 18.7%, 26.5%) and the oldest at 19.1% (95% CI: 15.3%, 23.4%). Compared to the 20–24 age group, the odds of unmet need for family planning are 1.4 times higher (or 40% higher) for women age 15–19 and are not significantly different for women age 45–49. Education level was significantly associated with unmet need for family planning. Women with more than one living child had greater odds of unmet need compared to those with one child. Muslim women showed 40% greater odds of unmet need compared to Christians, while women who had undergone female genital mutilation had 20% lower odds of unmet need. Women in the middle and richer wealth quintiles had 30–40% lower odds of unmet need compared to the poorest. The study also showed that knowledge of specific contraceptive methods was not significantly associated with unmet need for family planning. Women who reported challenges in obtaining money for treatment had 30% lower odds of unmet need. Other access barriers such as distance to facilities and needing permission were not significantly associated with unmet need. This study identifies factors that determine unmet need for family planning in Kenya. These include characteristics of women, cultural influences, and limitations in the health care system. A combination of approaches is recommended to address the unmet need for family planning in Kenya.

**Key words:** unmet need, family planning, Kenya

# 1 INTRODUCTION

## 1.1 Introduction and Background

Unmet need for family planning (FP) services is the percentage of married women who want to stop having children or want to wait before having more children but are not using any form of contraception to prevent pregnancy.[1] The trend of unmet need for FP services in the world showed a slight decrease from 13.1% in 1990 to 10.9% in 2005. However, since that time there has been limited progress, with the proportion remaining around 10% since 2000. This indicates that there has been no significant improvement in addressing the unmet need for FP globally.[2] Despite the significant increase in the modern contraceptive prevalence rate in Kenya from 53.2% in 2014 to 58% in 2020, there is approximately one in ten women with an unmet need for FP. Akoth et al.[3] investigated the factors associated with modern contraceptive use and unmet need among Kenyan women in urban areas. The results indicated that the rate of modern contraceptive use was lower, while unmet need was higher when compared to national averages. Significant predictors of these outcomes included the woman's age, educational attainment, and household wealth. Moreover, urban-rural disparities persist, as evidenced by the fact that 40% of urban women were not using modern contraceptives in 2014, with an additional 13% experiencing an unmet need for FP.[3] Addressing the unmet need for FP is crucial because it has significant implications for reproductive health, maternal and child well-being, gender equality, and sustainable development.

Unmet need for FP sets the stage for a cascade of consequences, with unintended pregnancies as one immediate outcome. These unintended pregnancies pose a significant health concern on a global scale. The pregnancies can have far-reaching effects such as limiting educational opportunities, creating economic challenges, and increasing health risks for individuals and families. Limited access to effective contraception and reproductive health care can lead to increased maternal and child health risks such as higher rates of maternal mortality and adverse health outcomes for children. The limited access perpetuates cycles of poverty and socioeconomic inequality because larger family sizes strain financial resources and limit opportunities for education and stable employment. The limited access can often lead to abortion, higher maternal mortality rates, and jeopardy of women's reproductive health.[4,5] Without effective contraceptive use and access to FP services, the population may experience uncontrolled growth, which causes challenges in the society, the economy, and the environment.[6] Unmet FP needs intuitively have significant long-term consequences that extend beyond the individual. The societal, economic, and health consequences of unmet FP needs highlight the importance of addressing this issue as a means of promoting gender equality and empowering women.

Gender inequality is exacerbated by unmet FP needs, particularly for women, because it creates barriers to education, workforce participation, and personal autonomy, and also hinders women's ability to achieve gender equality and empowerment.[5] Kenya's commitment to addressing the challenges of uncontrolled population growth aims to provide equitable, affordable, and quality FP services. The Government of Kenya has set a target to eliminate the unmet need for FP by 2030.[7]

According to the 2022 Kenya Demographic and Health Survey, 14% of currently married women have an unmet need for FP with 8% desiring to space their births and 6% wanting to limit the number of children they have.[8] In addition, 76% of currently married women age 15–49 have a demand for FP, which indicates

a desire to exercise reproductive choices. The survey also identified a disparity between the desired family size and the actual fertility rate in Kenya. The desirable fertility rate, which represents the number of children women desire to have, is 2.9 children per woman. However, the total fertility rate, which represents the actual number of children born per woman, is 3.4 children with 38% of pregnancies among women age 15–49 either unwanted at the time or wanted at a later stage.[8] These discrepancies, which suggest a gap between women's ideal reproductive choices and their current reproductive outcomes, are an indicator of the unmet need for FP.

In addition, a notable gap in the documentation of unmet FP needs exists within the DHS framework, which primarily focuses on currently married women of reproductive age. However, it is crucial to recognize that women who are not married reproduce and may experience unmet FP needs. In Nigeria, for example, unmarried women had a higher unmet need for FP (48%) compared to married women (19%).[9] In specific areas, the unmet need for FP among women of reproductive age has been particularly high, such as in Ilesha, Southwest Nigeria (58.2%).[10] Therefore, it is crucial to focus attention on the often-overlooked group of unmarried women in order to address the consequences that arise from all unmet FP needs.

Researchers have studied the subject of unmet FP needs, have recognized its significance and the implications for reproductive health and population dynamics, and have focused on identifying and addressing the contributing factors among women of reproductive age worldwide. The factors associated with unmet need for FP are both individual and community factors.[11] The individual factors include women's age, women's and husbands' education, wealth index, age at cohabitation, health care decision making, if they visited a health facility in the last 12 months, parity, number of under-5 children, household size, and having knowledge on FP methods. The community level factors include place of residence, level of illiteracy among women, and region.[11]

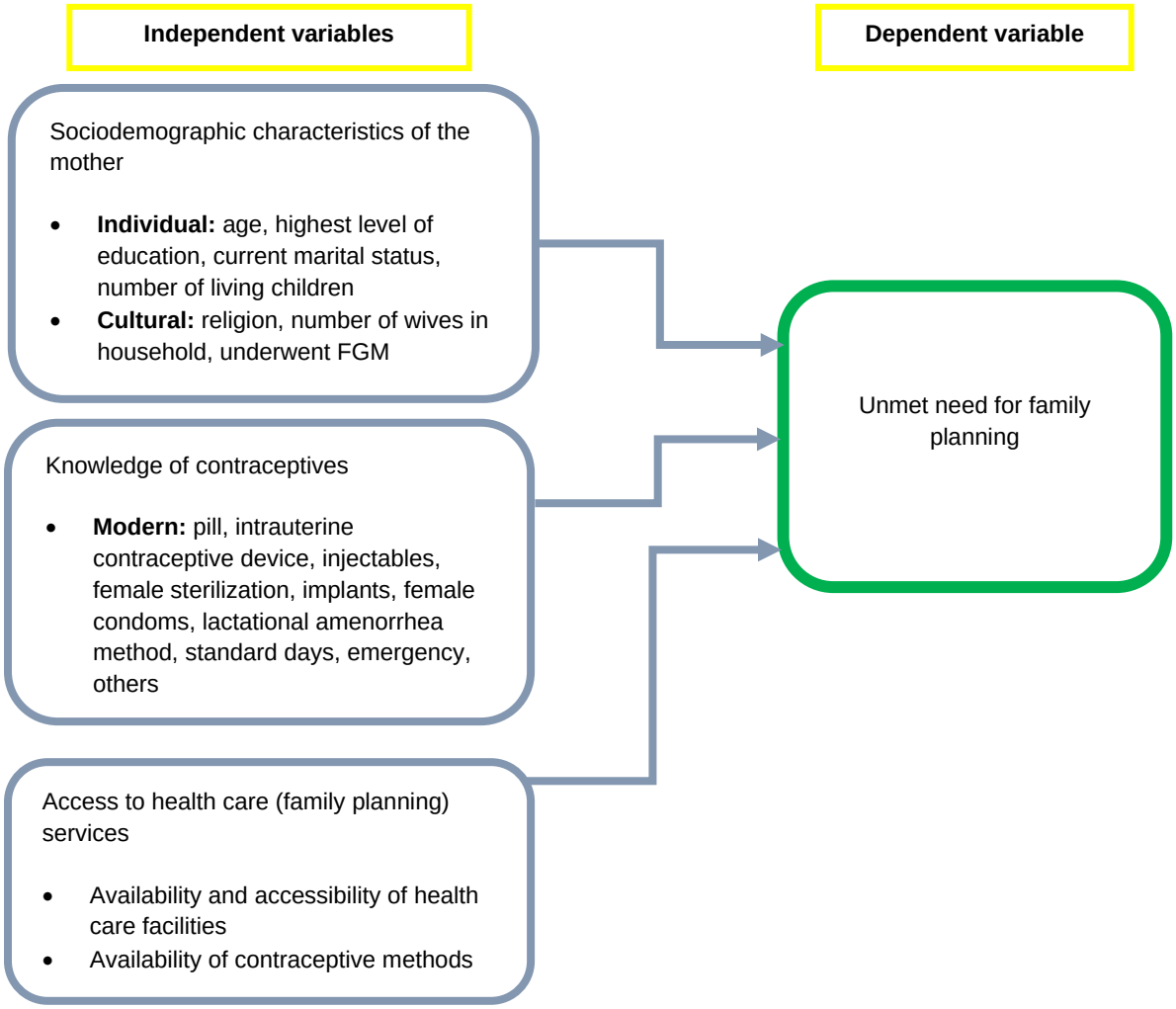
Understanding the role of knowledge in addressing the unmet need for FP is crucial. Adequate knowledge about contraception empowers individuals to make informed choices about their reproductive health that include contraceptive use. In addition, inability to access FP services can be caused by limited availability of contraceptive methods, inadequate health care infrastructure, and sociocultural factors that impede access, and is a crucial determinant of unmet FP need. According to Khoury and Salameh,[5] factors that contribute to the unmet need for FP in low- and middle-income countries (LMICs) include limited access to health care services, insufficient knowledge about contraceptive methods, and health-related concerns associated with potential side effects. Furthermore, for married women, an additional factor that influences the unmet need for FP is the combination of husbands' inadequate knowledge about FP methods with their dominant role in decision making about FP.

## 1.2 Research Objective

This study investigated the determinants of unmet need for FP among all Kenyan women of reproductive age. The study recognized the importance of addressing the broader spectrum of reproductive health needs and promoting equitable access to FP services for all women. The study addresses several key questions about women in Kenya and their unmet FP needs.

## 1.3 Conceptual Framework

**Figure 1 Graphical representation of the conceptual framework for the study**




## 1.4 Objective of the Study

The objective of the study is to assess the factors that contribute to the unmet need for FP among women in Kenya. Specifically, the study will determine the sociodemographic characteristics associated with unmet need for FP, examine the role of women's contraceptive knowledge and use, and explore the impact of access to health care services and availability of contraceptive methods on the unmet need for FP among women in Kenya.

# 2 DATA AND METHODS

## 2.1 Data Source and Study Population

This study utilized data from the 2022 Kenya Demographic and Health Survey (KDHS), which employed a two-stage cluster sampling design with the household as the ultimate sampling unit. The sample size was 42,300 households. In the first stage, a total of 1,692 (1,026 in rural areas and 666 in urban areas) clusters or enumeration areas were selected from the Kenya Household Master Sample Frame. After cluster selection, household listing was conducted in all the chosen clusters. In the second stage, 25 households were sampled from each cluster. In cases in which clusters had fewer than 25 households, all households within those clusters were included in the sample, irrespective of their number. This adjustment was implemented to ensure sufficient representation of households and to maintain the desired sample size.

## 2.2 Study Design

This study employed a cross-sectional research design to assess the factors that contributed to the unmet need for FP among women in Kenya.

In the study, we employed the survey weights provided by The Demographic and Health Surveys (DHS) Program to ensure the accuracy and representativeness of our findings. These weights accounted for the complex sample design and potential nonresponse bias, which allowed us to obtain valid, representative population estimates.

The survey utilized standardized questionnaires that were administered through face-to-face interviews. Ethical considerations, including informed consent and confidentiality, were ensured throughout the data collection process.

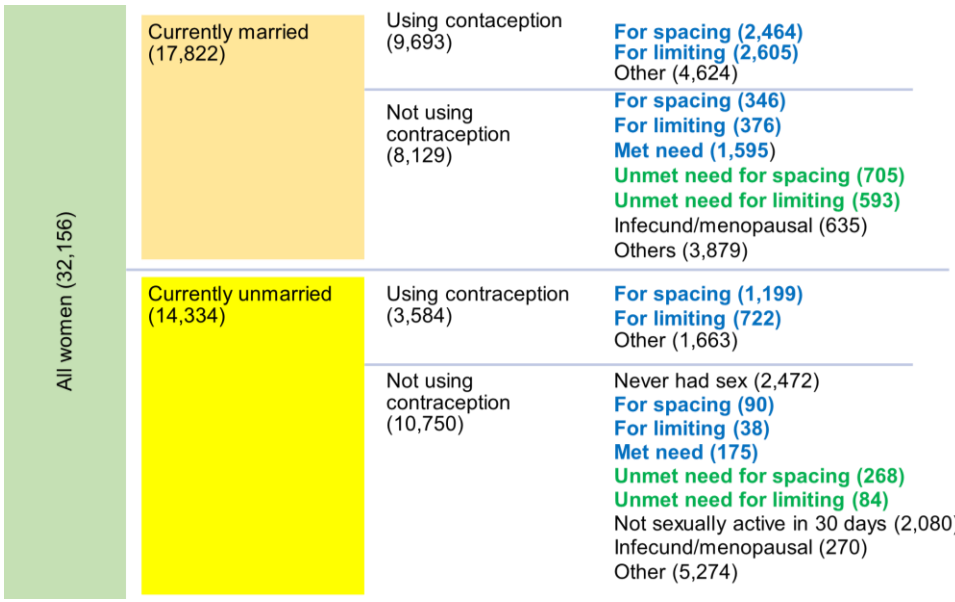
## 2.3 Variables

### 2.3.1 Dependent variable

The dependent variable for this study was unmet need for FP. This was dichotomous in which "1" represented unmet need, while "0" represented met need for FP. The DHS Program has methodology to calculate the unmet need for FP.[12] The Kenya 2022 DHS report calculated the unmet need for FP among married women only.[8] In this study, however, we included single women. Figure 2 presents a graphical representation of the calculation of unmet needs for both currently married and currently single women.

Generally, unmet need is classified into two categories, "unmet need for spacing" and "unmet need for limiting." To capture the data for the single women, we calculated those women who were sexually active in the past 30 days and were categorized as already stated. Women who were infecund, menopausal, or single but (1) never had sex or (2) had no sex in the past 30 days were excluded from the study. We used the dependent variable for the exclusion criterion, which resulted in a total of 11,196 (unweighted). When weighted, this translates to 11,260 individuals who were selected for this study.

**Figure 2** **Categorization of all women into met and unmet need for family planning**




### 2.3.2 Independent variables

The independent variables in this study included sociodemographic characteristics of the women, knowledge of modern contraceptives, and access to health care.

The sociodemographic characteristics included the woman's age categorized in 5-year age brackets, highest level of education, current marital status, and number of living children. Due to low numbers, those with more than five children were categorized as "6+." We also included religion, number of wives in the household (monogamous/polygamous), and if the woman underwent female genital mutilation (FGM). Other characteristics were place of residence and wealth quintile.

Variables on contraceptive knowledge were dichotomous. The women responded to 15 questions. The methods were categorized as modern, traditional, and male. The modern methods included contraceptive pill, intrauterine contraceptive device (ICD), injectables, female sterilization, implants, female condoms, lactational amenorrhea method (LAM), standard days method, emergency contraception, and country-specific modern methods. The traditional methods were periodic abstinence, withdrawal, and country-specific traditional methods. The male methods included male condoms and male sterilization.

Finally, four dichotomous variables were used to characterize access to health care: obtaining permission to go for treatment, obtaining money for treatment, distance to the health facility. And not wanting to go to the facility alone.

## 2.4 Statistical Analysis

The analysis in this study employed univariate, bivariate, and multivariate methods to investigate the factors that contributed to the unmet need for FP among women in Kenya. Counts and percentages were used to represent the demographic information. Bar graphs represented proportions of women who had knowledge about the different contraceptive methods and their access to health care.

For the bivariate analysis, we used a chi-square test of association since most independent variables were also categorical. This provided statistical tests for the different categories in each independent variable with the dependent variable (unmet need for FP).

Finally, a multivariable logistic model provided adjusted odds ratios for the dependent variable while controlling for independent variables.

# 3 RESULTS

## 3.1 Descriptive Analysis

### 3.1.1 Demographic analysis

Table 1 shows the distribution of the 11,260 respondents according to the demographic characteristics. Only 5.8% of the women were age 15–19, with the largest proportion age 25–29. Most of the women (38.9%) had attained primary education as their highest educational level, with only 5.9% not having any education. Eight of 10 women (77.1%) were married with the modal number of children being two (23.0%). Most women were Christians (81.9%), with two-thirds (67.5%) in monogamous households. Despite FGM being illegal in Kenya, 16.3% of the women stated they had experienced FGM. More than half of the women lived in urban settings (58.8%), while one in four women were in the richest wealth quintile (23.0%).

**Table 1 Percent distribution of women by sociodemographic characteristics**

| Variable | Number | % |
|---|---|---|
| ***Individual characteristics*** | | |
| **Age in months** | | |
| 15–19 | 658 | 5.8 |
| 20–24 | 2,118 | 18.8 |
| 25–29 | 2,545 | 22.6 |
| 30–34 | 2,113 | 18.8 |
| 35–39 | 1,920 | 17.1 |
| 40–44 | 1,181 | 10.5 |
| 45–49 | 725 | 6.4 |
| **Highest level of education** | | |
| No education | 668 | 5.9 |
| Primary | 4,378 | 38.9 |
| Secondary | 3,854 | 34.2 |
| Higher | 2,361 | 21.0 |
| **Current marital status** | | |
| Single | 2,576 | 22.9 |
| Married | 8,684 | 77.1 |
| **Number of living children** | | |
| 0 | 1,323 | 11.8 |
| 1 | 2,296 | 20.4 |
| 2 | 2,586 | 23.0 |
| 3 | 2,030 | 18.0 |
| 4 | 1,350 | 12.0 |
| 5 | 777 | 6.9 |
| 6+ | 897 | 8.0 |
| ***Cultural characteristics*** | | |
| **Religion** | | |
| Christian | 9,221 | 81.9 |
| Islam | 670 | 5.9 |
| Traditionalist | 919 | 8.2 |
| Other | 449 | 4.0 |
| **Number of wives in household** | | |
| Single | 2,576 | 22.9 |
| Monogamous | 7,603 | 67.5 |
| Polygamous | 736 | 6.5 |
| Didn't indicate | 345 | 3.1 |

*Continued…*

**Table 1—*Continued***

| Variable | Number | % |
|---|---|---|
| **Individual underwent female genital mutilation (FGM)** | | |
| No FGM | 9,142 | 81.2 |
| Underwent FGM | 1,835 | 16.3 |
| Didn't indicate | 283 | 2.5 |
| ***Household characteristics*** | | |
| **Place of residence** | | |
| Urban | 4,636 | 41.2 |
| Rural | 6,624 | 58.8 |
| **Wealth index** | | |
| Poorest | 1,801 | 16.0 |
| Poorer | 2,166 | 19.2 |
| Middle | 2,355 | 20.9 |
| Richer | 2,353 | 20.9 |
| Richest | 2,585 | 23.0 |
| **Total** | **11,260** | **100.0** |

### 3.1.2 Contraceptive knowledge and challenges in accessing health care

Responses about contraceptive knowledge are provided in Table 2 and Figure 3. In Figure 3, the green bars represent the modern contraceptive methods, the red bars the traditional contraceptive methods, and the blue bars the male contraceptive methods. The bars represent the percentage of women who knew about the contraceptive method. The most well-known modern contraceptive methods were injectables, with 98.6% of the women interviewed having knowledge of the method, followed by implants (97.3%) and pills (96.2%). A very small number of respondents were familiar with country-specific modern or traditional methods. The country-specific modern methods included cervical cap, contraceptive sponge, and others, while the country-specific traditional methods included herbs, amulets, and gris-gris.

**Figure 3 Proportion of women who knew the contraceptive method**

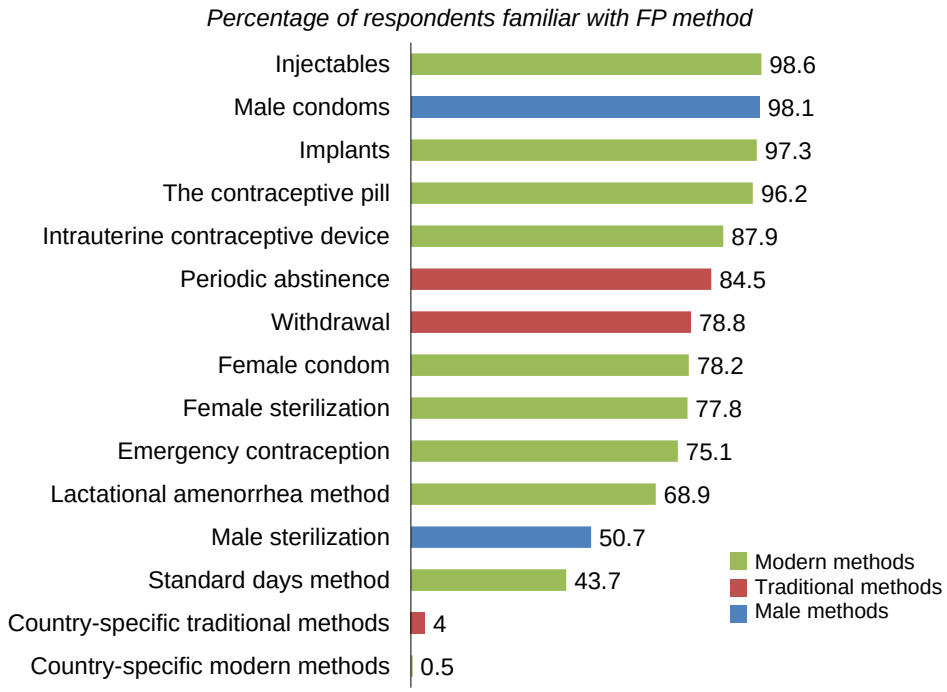
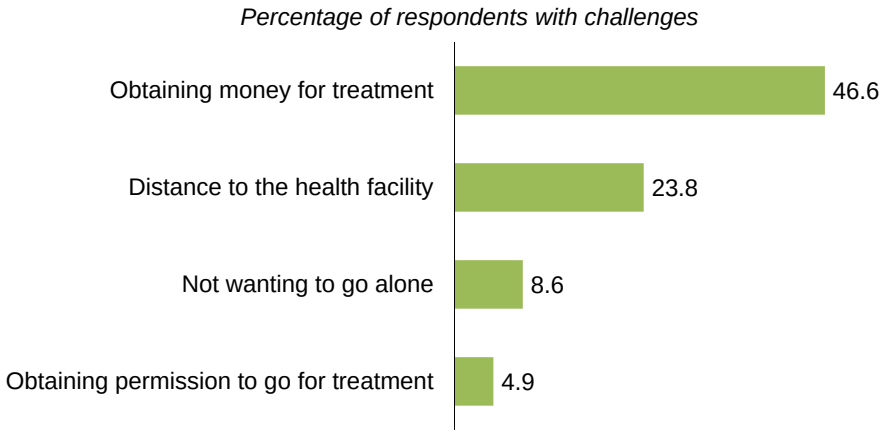



**Table 2 Knowledge of family planning methods and challenges in accessing health care**

| *% of women who know about a family planning method* | | |
|---|---|---|
| **Modern family planning methods** | **%** | **95% CI** |
| The contraceptive pill | 96.2 | 95.7, 96.6 |
| Intrauterine contraceptive device | 87.9 | 87.1, 88.7 |
| Injectables | 98.6 | 98.3, 98.8 |
| Female sterilization | 77.8 | 76.7, 78.9 |
| Implants | 97.3 | 96.9, 97.7 |
| Female condom | 78.2 | 77.0, 79.3 |
| Lactational amenorrhea method | 68.9 | 67.7, 70.2 |
| Standard days method | 43.7 | 42.3, 45.1 |
| Emergency contraception | 75.1 | 73.9, 76.3 |
| Country-specific modern methods | 0.5 | 0.3, 0.7 |
| **Traditional family planning methods** | | |
| Periodic abstinence | 84.5 | 83.5, 85.4 |
| Withdrawal | 78.8 | 77.7, 79.9 |
| Country-specific traditional methods | 4.0 | 3.5, 4.7 |
| **Male family planning methods** | | |
| Male condom | 98.1 | 97.8, 98.4 |
| Male sterilization | 50.7 | 49.3, 52.1 |
| *% experiencing challenges in accessing healthcare* | | |
| Obtaining permission to go for treatment | 4.9 | 4.4, 5.4 |
| Obtaining money for treatment | 46.6 | 44.9, 48.2 |
| Distance to the health facility | 23.8 | 22.5, 25.1 |
| Not wanting to go alone | 8.6 | 7.9, 9.3 |

Finally, challenges in accessing health care are shown in Figure 4. The main challenge in accessing health care was obtaining money for treatment, with 46.6% of women reporting experiencing this challenge.

**Figure 4 Challenges in accessing health care**




## 3.2 Associations between Demographic Factors and Unmet Need for Family Planning

The study investigated the factors that contribute to the unmet need for FP among women in Kenya. The results of the association analysis are presented in Table 3. The chi-square test of association was used. The findings show that only marital status and if the woman had undergone FGM did not have statistically significant associations.

The results reveal that a higher proportion of women in the youngest (age 15–19) and oldest (age 45–49) groups experienced unmet need for FP at 22.4% (95% confidence interval [CI]: 18.7%, 26.5%) and 19.1% (95% CI: 15.3%, 23.4%), respectively, as compared to those in the middle age brackets. The middle age groups had lower levels of unmet need that ranged from 16.5% (95% CI: 14.4%, 18.9%) for those age 20–24 to 14.8% (95% CI: 12.6%, 17.4%) for those age 40–44.

Education was also found to have a significant association with unmet need for FP. A higher proportion of women with no education (26.1%; 95% CI: 23.0%, 29.4%) had unmet need compared to those with any level of education. In addition, a larger proportion of women with six or more children (25.7%; 95% CI: 22.8%, 28.8%) experienced unmet need compared to those with fewer children.

The study also identified associations between cultural factors and unmet need. A higher percentage of Islamic women (22.2%; 95% CI: 18.9%, 25.8%) had unmet need for FP compared to Christian women (14.0%; 95% CI: 13.0%, 15.0%). Similarly, a greater proportion of women in polygamous relationships (21.2%; 95% CI: 17.8%, 25.1%) experienced unmet need than those in monogamous relationships (14.5%; 95% CI: 13.5%, 15.7%).

Economic factors were also associated with unmet need. A lower percentage of women from urban settings (11.8%; 95% CI: 10.2%, 13.6%) had unmet need compared to those in rural areas (16.7%; 95% CI: 15.7%, 17.7%). In addition, almost a quarter of women in the poorest wealth quintile (21.4%; 95% CI: 19.3%,

23.7%) experienced unmet need, while the richer quintile had the lowest proportion (11.7%; 95% CI: 10.0%, 13.5%).

**Table 3 Association between unmet need for family planning and sociodemographic characteristics**

| | Met FP needs | | Unmet FP needs | | |
|---|---|---|---|---|---|
| | % | 95% CI | % | 95% CI | *p* value |
| ***Individual characteristics*** | | | | | |
| **Age** | | | | | <.001 |
| 15–19 | 77.6 | 73.5, 81.3 | 22.4 | 18.7, 26.5 | |
| 20–24 | 83.5 | 81.1, 85.6 | 16.5 | 14.4, 18.9 | |
| 25–29 | 88.1 | 86.3, 89.8 | 11.9 | 10.2, 13.7 | |
| 30–34 | 86.9 | 85.0, 88.7 | 13.1 | 11.3, 15.0 | |
| 35–39 | 86.4 | 84.2, 88.4 | 13.6 | 11.6, 15.8 | |
| 40–44 | 85.2 | 82.6, 87.4 | 14.8 | 12.6, 17.4 | |
| 45–49 | 80.9 | 76.6, 84.7 | 19.1 | 15.3, 23.4 | |
| **Highest level of education** | | | | | <.001 |
| No education | 73.9 | 70.6, 77.0 | 26.1 | 23.0, 29.4 | |
| Primary | 84.2 | 82.8, 85.5 | 15.8 | 14.5, 17.2 | |
| Secondary | 86.0 | 84.3, 87.6 | 14.0 | 12.4, 15.7 | |
| Higher | 89.6 | 87.4, 91.4 | 10.4 | 8.6, 12.6 | |
| **Current marital status** | | | | | .222 |
| Single | 86.3 | 84.5, 88.0 | 13.7 | 12.0, 15.5 | |
| Married | 85.1 | 84.0, 86.1 | 14.9 | 13.9, 16.0 | |
| **Number of living children** | | | | | <.001 |
| 0 | 85.6 | 82.5, 88.1 | 14.4 | 11.9, 17.5 | |
| 1 | 86.8 | 84.9, 88.5 | 13.2 | 11.5, 15.1 | |
| 2 | 88.3 | 86.5, 89.9 | 11.7 | 10.1, 13.5 | |
| 3 | 85.6 | 83.5, 87.5 | 14.4 | 12.5, 16.5 | |
| 4 | 85.6 | 82.9, 88.0 | 14.4 | 12.0, 17.1 | |
| 5 | 82.3 | 78.9, 85.3 | 17.7 | 14.7, 21.1 | |
| 6+ | 74.3 | 71.2, 77.2 | 25.7 | 22.8, 28.8 | |
| ***Cultural characteristics*** | | | | | |
| **Religion** | | | | | <.001 |
| Christian | 86.0 | 85.0, 87.0 | 14.0 | 13.0, 15.0 | |
| Islam | 77.8 | 74.2, 81.1 | 22.2 | 18.9, 25.8 | |
| Traditionalist | 85.5 | 82.6, 88.0 | 14.5 | 12.0, 17.4 | |
| Other | 81.9 | 76.2, 86.5 | 18.1 | 13.5, 23.8 | |
| **Number of wives in household** | | | | | <.001 |
| Single | 86.3 | 84.5, 88.0 | 13.7 | 12.0, 15.5 | |
| Monogamous | 85.5 | 84.3, 86.5 | 14.5 | 13.5, 15.7 | |
| Polygamous | 78.8 | 74.9, 82.2 | 21.2 | 17.8, 25.1 | |
| Didn't indicate | 89.5 | 84.7, 92.9 | 10.5 | 7.1, 15.3 | |
| **Individual underwent female genital mutilation (FGM)** | | | | | .058 |
| No FGM | 85.8 | 84.7, 86.8 | 14.2 | 13.2, 15.3 | |
| Underwent FGM | 83.5 | 81.7, 85.1 | 16.5 | 14.9, 18.3 | |
| Did not indicate | 83.3 | 77.8, 87.7 | 16.7 | 12.3, 22.2 | |
| ***Household characteristics*** | | | | | |
| **Place of residence** | | | | | <.001 |
| Urban | 88.2 | 86.4, 89.8 | 11.8 | 10.2, 13.6 | |
| Rural | 83.3 | 82.3, 84.3 | 16.7 | 15.7, 17.7 | |
| **Wealth index** | | | | | <.001 |
| Poorest | 78.6 | 76.3, 80.7 | 21.4 | 19.3, 23.7 | |
| Poorer | 83.8 | 81.8, 85.5 | 16.2 | 14.5, 18.2 | |
| Middle | 86.9 | 85.1, 88.5 | 13.1 | 11.5, 14.9 | |
| Richer | 88.3 | 86.5, 90.0 | 11.7 | 10.0, 13.5 | |
| Richest | 87.3 | 85.0, 89.2 | 12.7 | 10.8, 15.0 | |
| **Total** | **85.3** | **84.4, 86.3** | **14.7** | **13.7, 15.6** | |

## 3.3 Multivariable Analysis

The study conducted a multivariable logistic regression analysis to estimate the odds of a woman experiencing unmet need for FP, while controlling for various sociodemographic characteristics, contraceptive knowledge, and access to health care.

The overall variance inflation factor (VIF) was 1.72, which indicated minimal multicollinearity between the variables. Certain variables with very low proportions of women experiencing unmet need or underrepresented categories were excluded from the analysis.

The results, presented in Table 4, show that older women had lower odds of experiencing unmet need compared to women age 20–24. Specifically, women age 30–35 had 50% lower odds (adjusted odds ratio [AOR: 0.5; 95% CI: 0.4, 0.7) of experiencing unmet need, while controlling for other factors.

The more children a woman had, the greater the odds of experiencing unmet need. Women with six or more children had 2.7 times greater odds (AOR: 2.7; 95% CI: 1.9, 3.7) of experiencing unmet need compared to those with a single child, after controlling for other variables.

**Table 4 Multivariable regression of unmet need for family planning on sociodemographic characteristics, contraceptive knowledge, and access to health care**

| | Unmet need for FP | |
|---|---|---|
| **Variable** | **AOR** | **95% CI** |
| ***Sociodemographic characteristics*** | | |
| **Age** (ref: 20–24) | | |
| 15–19 | 1.4 | 1.0, 1.9 |
| 25–29 | 0.6*** | 0.4, 0.8 |
| 30–34 | 0.6*** | 0.4, 0.8 |
| 35–39 | 0.5*** | 0.4, 0.7 |
| 40–44 | 0.6** | 0.4, 0.8 |
| 45–49 | 0.8 | 0.5, 1.2 |
| **Highest level of education** (ref: primary) | | |
| No education | 1.1 | 0.9, 1.5 |
| Secondary | 1.1 | 0.9, 1.3 |
| Higher | 1.1 | 0.8, 1.4 |
| **Current marital status** (ref: married) | | |
| Single | 0.9 | 0.8, 1.1 |
| **Number of living children** (ref: 1) | | |
| 0 | 0.8 | 0.6, 1.1 |
| 2 | 1.1 | 0.9, 1.4 |
| 3 | 1.6** | 1.2, 2.1 |
| 4 | 1.3 | 0.9, 1.9 |
| 5 | 1.8*** | 1.3, 2.4 |
| 6+ | 2.7*** | 1.9, 3.7 |
| **Religion** (ref: Christian) | | |
| Islam | 1.4* | 1.0, 1.8 |
| Traditionalist | 1.0 | 0.7, 1.2 |
| Other | 1.3 | 0.9, 1.9 |
| **Number of wives in household** (ref: monogamous) | | |
| Polygamous | 1.1 | 0.8, 1.4 |
| **Individual underwent female genital mutilation (FGM)** (ref: didn't undergo FGM) | | |
| Underwent FGM | 0.8** | 0.6, 0.9 |
| **Place of residence** (ref: urban) | | |
| Rural | 1.2 | 1.0, 1.5 |

*Continued…*

**Table 4—*Continued***

| Variable | Unmet need for FP | |
|---|---|---|
| | AOR | 95% CI |
| **Wealth index** (ref: poorest) | | |
| Poorer | 0.9 | 0.7, 1.1 |
| Middle | 0.7** | 0.6, 0.9 |
| Richer | 0.7* | 0.6, 1.0 |
| Richest | 0.9 | 0.7, 1.2 |
| ***Contraceptive knowledge*** (ref for each: FALSE) | | |
| The contraceptive pill | 0.9 | 0.7, 1.3 |
| Intrauterine contraceptive device | 0.8 | 0.6, 1.0 |
| Injectables | 1.1 | 0.7, 1.8 |
| Female sterilization | 0.9 | 0.7, 1.0 |
| Implants | 0.8 | 0.5, 1.4 |
| Female condom | 0.9 | 0.7, 1.1 |
| Lactational amenorrhea method | 1.1 | 0.9, 1.3 |
| Standard days method | 0.9 | 0.8, 1.1 |
| Emergency contraception | 1.1 | 0.9, 1.3 |
| Periodic abstinence | 0.9 | 0.7, 1.1 |
| Withdrawal | 1.0 | 0.8, 1.2 |
| Male condom | 1.3 | 0.9, 1.9 |
| Male sterilization | 0.9 | 0.8, 1.1 |
| ***Access to health care*** (ref for each: not a challenge) | | |
| Challenge of obtaining permission to go for treatment | 1.3 | 0.9, 1.7 |
| Challenge of obtaining money for treatment | 0.7** | 0.6, 0.9 |
| Challenge of distance to the health facility | 1.0 | 0.8, 1.2 |
| Challenge of not wanting to go alone | 0.9 | 0.7, 1.1 |

AOR = adjusted odds ratio
***$p < .001$; **$p < .01$; *$p < .05$.

The analysis also revealed that Islamic women had 1.4 times greater odds (AOR: 1.4: 95% CI: 1.0, 1.8) of experiencing unmet need compared to the Christian women, while holding other factors constant. Women who had undergone FGM had 20% lower odds (AOR: 0.8; 95% CI: 0.6, 0.9) of experiencing unmet need compared to those who had not, while controlling for other covariates.

For wealth status, women in all other wealth quintiles had lower odds of experiencing unmet need as compared to those in the poorest quintile. For example, women in the middle wealth quintile had 30% lower odds (AOR: 0.7; 95% CI: 0.6, 0.9) of experiencing unmet need, while controlling for other factors.

The analysis did not find any statistically significant associations between knowledge of contraceptive methods and unmet need. However, for the variables that indicated access to health care, the study found that respondents who had challenges obtaining money for treatment had 30% lower odds (AOR: 0.7; 95% CI: 0.6, 0.9) of experiencing unmet need compared to those who did not face this challenge, while controlling for other variables.

# 4 DISCUSSION

This analysis provides important insights into the factors associated with unmet need for FP among women in Kenya, including both currently married and unmarried women. The findings highlight several demographic and access-related variables that contribute to this critical issue. Since there was no statistically significant association between marital status and unmet needs (*p* value = .222), the discussion provides overviews for all women.

The proportion of unmet need was lower among the women age 15–49 in Kenya according to this analysis (14.7%) than in the *Unmet Need for Family Planning among Young Women: Levels and Trends* report (30.2%),[13] which indicated that unmet need improved in Kenya between 2008 and 2022. One key finding in this study is the relationship between age and unmet need, with the youngest (age 15–19) and oldest (age 45–49) women experiencing the highest levels. This contrasts with the pattern observed in Burundi, where unmet need decreased with age after 35 but remained high for women age 15–24.[14] Given that the women in the youngest and oldest age brackets have the highest unmet needs, more analysis is needed to identify the possible causes and tailored interventions that can meet these women's needs.

Education also emerged as a significant factor, with uneducated women having much greater odds of unmet need compared to those with any level of schooling. This agrees with other studies, including in Ethiopia, where it was found that women with no formal education were 1.9 times more likely to have unmet need.[6] This underscores the importance of improving girls' access to education as a means of empowering women and increasing contraceptive knowledge and use.

Prevalence of FGM in Kenya is 15.0%, with the highest proportion being women with no formal education (11.0%).[8] Women who had undergone FGM had lower odds of unmet need. This counterintuitive finding may be related to complex cultural norms and gender dynamics that require further exploration. It is important to understand how FGM status intersects with other factors such as marital status, spousal communication, and women's autonomy in decision making about FP.

The analysis also revealed disparities by religion, with Islamic women experiencing greater unmet need. A study of unmet needs among Muslims in India showed that the rate of unmet need in a Muslim dominant region, Bihar, almost doubled that of the national population. The rates were 48.5% and 27.6%, respectively. This was attributed to religious convictions that shun the use of modern contraceptives.[15] Women who live in polygamous households tend to have a higher unmet need for FP compared to those in monogamous relationships. Further research can closely examine this issue, with a particular focus on how the dynamics of the number of wives in a household and their respective fertility preferences may influence the overall unmet need for FP.

Unsurprisingly, women of lower socioeconomic status, those living in rural areas, and those in the poorest wealth quintile had greater odds of unmet need. This finding aligns with previous research conducted in Burundi,[14] Malawi,[16] Uganda, and Tanzania.[17] This suggests that efforts to improve financial accessibility and geographic availability of FP services are critical. Reducing economic and logistical barriers to care should be a priority. The access to modern FP methods in public centers varies by region and sector, with half of the populace reporting receiving them at no cost. Among those using modern contraceptive methods, the costs usually range from USD 0.8 to USD 4.3.[18] Contrary to expectations, women who reported

challenges in obtaining money for treatment had lower odds of unmet need. This counterintuitive finding warrants further investigation to understand the underlying mechanisms. It is possible that while these women have awareness of and access to subsidized FP services, there may be other underlying factors that contribute to their unmet need status.

Overall, this analysis underscores the multifaceted nature of unmet need for FP. Addressing this issue will require a comprehensive, equity-focused approach that examines sociodemographic factors. Tailored, context-specific interventions that empower women, engage communities, and strengthen health systems will be critical to ensuring that all Kenyan women can fulfill their reproductive intentions.

# 5 CONCLUSION

The National Reproductive Health Policy 2022–2032 has a target to achieve a modern contraceptive prevalence rate (mCPR) target of 64% and to reduce the unmet need for family planning to 10% for both married and unmarried women by 2030. The National Family Planning Guidelines for Service Providers plans to attain this through enhancing imagery at FP delivery points, providing positive information about the methods and their health benefits, strengthening links to community support systems and other stakeholders, and dispelling myths about the contraception methods.[19] This involves addressing impediments that include religion, culture, and wealth status that especially affect youth. This study reflected those impediments that had a positive association with unmet need, along with the fact that women in the oldest age bracket were likely to have unmet need. Thus, developing imagery and education content tailored to this age bracket will help to combat unmet need. This refinement will help to achieve the six percentage point decrease in unmet need in the stipulated time period.

The analysis revealed that factors such as age, education, FGM, religion, marital status, and socioeconomic status all play a significant role in unmet need. This underscores the need for a policy to move beyond a one-size-fits-all approach to tailored, context-specific interventions that empower women, engage communities, and strengthen the health system's capacity to deliver equitable, rights-based FP services. Addressing the unique needs of adolescents, older women, uneducated women, Islamic women, and women in polygamous relationships will be critical to ensuring universal access to and utilization of contraception.

The counterintuitive findings related to FGM status and financial barriers to accessing health care suggest the need for deeper exploration of the complex cultural norms and factors in the health system that influence FP decision making and care seeking. A more focused understanding of these contextual realities will be essential for designing appropriate, evidence-based interventions.

The national policy will need to adopt a transformative approach that addresses the multifaceted determinants of unmet need in order to significantly accelerate progress towards the 2030 mCPR target and, ultimately, to achieve universal access to quality FP services in Kenya. Key priorities should include improving access to youth-friendly FP services and comprehensive sex education, empowering women through education and economic opportunities to enhance their ability to make reproductive choices, and expanding availability of FP services, especially in the underserved regions, by strengthening community-based distribution and mobile outreach.

Finally, the findings from this study can be linked to the review by Senderowicz and Maloney[20] on the focused interpretation of the unmet need metric. This review concluded that the demand-side unmet need exceeds the supply-side need for contraceptives. By disaggregating unmet need into demand-side and supply-side components, policymakers and program implementers can develop a more person-centered understanding of contraceptive needs and then design tailored interventions that address both access and the underlying drivers of demand.

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