

# Determinants and reasons for low coverage of modern family planning in the Mugonero District Hospital catchment area

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## ABSTRACT

**Introduction:** Effective birth control is a key intervention in developing countries to achieve sustainable development goals. The United Nations (UN) reported that in 2015 the percentage of married couples using any form of contraceptive was 64.0%, and the average in Africa was 33.0%. This study aimed at assessing and determining factors associated with the low uptake of Modern Family Planning (MFP) Methods.

**Methods:** A mixed method population-based cross-sectional survey; quantitative and qualitative methods were applied. Villages and participants were randomly selected and ethical considerations were respected. Proportions and logistic regression were computed.

**Results:** Married or cohabitating women were the significant majority in our sample (72.7%). In total, 73.5% had used MFP methods in the past, and 61.3% of them were still using the MFP method. Among MFP methods users, 47.1% experienced side effects and 12.4% discontinued MFP. Over time, 11.8% got pregnant despite using the MFP method. A proportion of 8.5% among respondents missed MFP sessions and 53.0% reported that they would use MFP methods despite the unwillingness of their husbands. Women aged 25-34 years were highly likely to use MFP method (71.0%) and married women (70.5%) were also highly likely to use MFP. Not cohabiting with a partner (aOR=4.4[95% CI:3.855-5.071] was associated with using MFP. Ignorance, religion, unfaithfulness to marriage vow, side effects, poverty, and a lack of MFP for men were reported as the main reasons behind low uptake of MFP.

**Conclusion:** Side effects and faith are barriers to MFP. Unfaithfulness can jeopardize MFP use. Sensitization to MFP use is needed.

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## INTRODUCTION

Birth control is a key intervention to achieve Sustainable Development Goals (SDGs). It can stabilize the discrepancy between demographic growth and natural resources. Failure of birth control is the main contributor to malnutrition and lack of education in large families in developing countries.

Family planning (FP) is a concerning issue worldwide. The United Nations (UN) in 2015, reported that, globally, the percentage of married or partnered women using contraceptive methods of any kind was 64.0% [1]. However, contraceptive use was lower in developing countries (40.0%) and was 33.0% in Africa [1]. Unmet needs of FP is still high. The World Health Organization (WHO) reported that, in 26 countries worldwide, contraceptive prevalence is below 20.0%, and it estimated that there are over 137 million women of reproductive age who do not wish to become

pregnant in the next two years, but are not using any form of FP [2]. Demographic growth is high in developing countries compared to developed countries. For this reason the fertility rates in developing countries is almost double (2.9 per woman) compared to those in developed countries (1.6 per woman) [3]. In some developing countries, the reported fertility rates are more than five births per woman [3].

Researchers reported that poverty could jeopardize the access to reproductive health and the use of MFP [3]. Most East African countries are in a similar situation i.e. there is low FP coverage. For instance, in Tanzania, the use of MFP by married women was 32.0% in 2016 [4]. In Kenya the use of any FP methods among women of reproductive age was 42.6% while the use of MFP was 39.1%; the use of any FP method by married women was 58.0% while the use of modern contraceptives by married women was 53.2% [5]. As coverage of FP is low in African countries in general, there are unmet needs.

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In East Africa, a systematic review showed that the prevalence of unmet needs for family planning was 16.8% in Kenya, 23.3% in Rwanda, 33.2% in Uganda and 27.8% in Tanzania [4].

Reasons behind the low coverage of MFP in African countries were explored by many authors. Among other social determinants or barriers behind the low uptake of MFP, the fear of side effects, financial issues, socio-cultural norms influencing the family size and misconceptions about MFP were reported as the main causes [6, 7]. Other barriers were identified in different studies including: lack of proper communication between the wife and husband, lack of knowledge of MFP and low accessibility and availability, and religion [7].

In Rwanda, interventions and researches on FP is one of the top priorities. The coverage of FP among married women of reproductive age, using contraceptive methods of any kind, in 2015, was 53.2% while 47.5% were using just MFP methods [8]. In the Western Province, where the Karongi District and Mugonero Hospitals are located, the use of any FP method for spacing and limiting birth among married women in the same period was 50.3% and the percentage of FP satisfied demand of MFP methods in Karongi District was 56.4% [8].

There are identified barriers to MFP methods in Rwanda with side effects being the most important one. Women said that they were more afraid of using MFP methods than getting pregnant [9]. Others believed and reported that it was wrong to use contraceptive methods [10]. Others reported prior religious beliefs as reasons. However, many other reasons remain unknown and should be explored.

The aim of this study is to assess and determine factors associated with the low uptake of MFP methods in the Mugonero Catchment area.

## METHODS

**Study design:** A cross-sectional, population-based survey conducted in the Mugonero DH catchment. Mixed methods (quantitative and qualitative) were applied.

**Quantitative survey:** A structured questionnaire was used by data collectors to interview participants in 30 selected villages representing Mugonero DH catchment area. Villages and participants were randomly selected.

**Qualitative survey:** Focus group discussions (FGDs) and in-depth interviews (IDI) were organized in confidential places. Three FGDs were conducted with females and one FGD with males. Three IDI were conducted, two with CHWs and another with a nurse from the health center. An electronic recorder was used for data collection.

**Inclusion criteria:** Participants in the survey were women (15-49 y/o) who voluntarily consented to be interviewed and who were living in the selected households.

**Sample size for quantitative data:** The minimum calculated sample size was 304 people. The primary sampling unit was the village. This sample size was distributed across 30 selected villages, using probability proportional to size methods.

**Data collection process:** Data collectors were trained to use tablets, to become familiar with the quantitative questionnaire, and to consider ethical considerations. Eligible participants were recruited in their household and requested to voluntarily participate in the study after signing the informed consent form.

**Statistical methods:** STATA 13 software was used for quantitative data analysis and Nvivo10 for qualitative data analysis. Descriptive analysis and associated factors for not using FP were analyzed. We used svy set command, adjusted for recruitment venue, to help consider villages as clusters and, during regression, adjusted for it. Odds ratios (OR) for those currently using MFP were estimated using bivariate analyses. Currently using MFP and associated factors significant at the  $p < 0.05$  level in bivariate analysis were included in a multivariable logistic regression model to determine the effect of independent variables to currently using MFP. Variables were retained in the final model when achieving  $p < 0.05$  significance. The associated factors behind those currently using MFP were determined using co-variables fitted in the multivariable logistic regression analysis: age, marital status, level of education, occupation and social category. The associations of missing values were assessed by fitting indicator variables for missing values for each variable with the outcome. Understanding the reasons for low coverage by qualitative data.

**Ethical considerations:** Appropriate measures were taken to ensure survey participant protection, informed consent, voluntary participation in a private place and confidentiality. In addition, a formal review and approval of the instruments were obtained from the Ethics Committee.

## RESULTS

### Part I. Quantitative results

Table 1 displays social demographic characteristics of respondents. A proportion of 41.8% of participants were aged between 25 to 34 years old. Married or cohabitating women were represented highly (72.7%).

Among all respondents, 89.9% have given birth. By occupation, 87.5% among respondents are farmers/breeders. Most participants had medical insurance; 88.1% were covered by RSSB-Mutuelle de Santé. The median age of the first pregnancy was 20 years old.

The median number of children born, the median number of living children and the median number of preferred children in the household was the same: three.

**Table 1: Social demographic characteristics of respondents (N=328)**

Social demographic characteristics	N	%
Age group		
15-19	20	6.1
20-24	52	15.9
25-34	137	41.8
35-44	94	28.7
45-49	25	7.6
Marital status		
Single	66	20.1
Married/cohabitating	237	72.7
Divorced/separated	19	5.8
Widowed	6	1.9
Ever gave birth	292	89.9
Education level (Completed)		
None	161	49.1
Primary	126	38.4
Vocational	8	2.4
Secondary	25	7.6
High	8	2.4
Occupation		
Farmer/breeder	287	87.5
Small business	3	0.9
Public servant	14	4.3
Part time worker	9	2.7
Entrepreneur	1	0.3
Jobless	14	4.3
Religion		
Catholic	32	9.8
Protestant	122	37.2
Muslim	2	0.6
Adventist	156	47.6
No religion	1	0.3
Other religion	15	4.6
Medical insurance		
Mutuelle de santé	289	88.1
None	24	7.3
RAMA	15	4.6
Social category cluster		
1	39	12.0
2	112	34.7
3	173	53.1
4	2	0.6
	Median	IQR
Median age of first pregnancy	20	18-22
Median age of first delivery	21	19-23
Median number of born children	3	2-5
Median number of living children	3	2-5
Median number of preferred children	3	3-4

Table 2 displays the awareness and use of MFP among women. Those who have previously used MFP methods were estimated at 73.5%. Among these, 47.1% experienced side effects, 26.1% continued using the same family planning methods despite side effects, 15.9% shifted to another MFP method and 12.4% stopped using MFP method. Among respondents, 47.8% were aware of vasectomy, 44.8% among them would suggest vasectomy to their husbands, whereas 79.3% were aware of tubal ligation. In regards to the duration of MFP, 47.1% would chose to use methods with a duration of greater than 3 years whilst 39.7% would choose to use less than or equal to 3 years. It was estimated that 78.9% were planning to use MFP in the future. With regards to getting pregnant when using MFP over time, 11.8% reported that they got pregnant despite using MFP and 8.5% among respondents reported that they missed MFP products when they were needing them. A proportion of 53.0% reported that they would use MFP methods despite the unwillingness of their husbands.

Table 3 shows the coverage of MFP methods in the Mugonero catchment area. The overall coverage of MFP here was 61.3%.

**Table 2: Awareness and use of MFP (N=328)**

Characteristics	N	%
Ever heard MFP	315	96.0
Ever heard traditional FP method	112	35.2
Ever used traditional FP method (N=112)	51	45.5
Know that CHWs sensitize on FP	292	89.9
sensitized by Facility Health workers of FP	297	92.2
Ever used MFP	233	73.5
Currently using MFP	185	61.3
Experienced FP side effects	115	47.1
Action taken with FP side effects		
Stopped completely FP method (N=233)	29	12.4
Shifted to other medicines	37	15.9
Continued using the same medicines despite side effects	61	26.1
Experienced abortion	46	16.3
Aware about vasectomy	52	48.7
Can suggest vasectomy to husband	116	44.8
Aware about tubal ligation	253	79.3
Choice of duration of FP		
Less than 3 years duration of FP	129	39.7
More than 3 years duration of FP	153	47.1
None	43	13.2
Can encourage other to use MFP	296	91.1
Planning to use MFP in the future	221	78.9
Got pregnancy despite FP use	33	11.8
Experienced FP method shortage	25	8.5
Can use FP method despite husband willing	170	53.0

By age, 25-34 years old women were more likely to use MFP method (71.0%), whilst married women (70.5%) were more likely to use MFP than unmarried women.

In addition, table 4 describes factors associated with MFP uptake. Age, marital status, age at first delivery, education level, unexpected pregnancy, social cluster, FP side effects and "got pregnant while on MFP" were the variables used to perform a bivariate logistic regression model. In multivariate logistic regression, not living in union (aOR=4.4[95% CI:3.855-5.071] was positively associated with using MFP compared with living in union.

**Table 3: Coverage of modern family planning**

Characteristics	N	%
Total	185	61.3
Age group		
15-19	1	7.7
20-24	25	55.6
25-34	93	71.0
35-44	56	62.2
45-49	10	43.5
Marital status		
Living in union	160	70.5
Not living in union	25	33.3
Ever gave birth	183	65.6
Education		
Not attended school	97	63.4
Ever attended school	88	59.1
Occupation		
Farmer/breeder	171	64.5
Other occupation	14	37.8
Religion		
Catholic	18	56.3
Protestant	65	58.6
Adventist	90	63.4
Other religions	12	70.6
Medical insurance		
Mutuelle de santé	169	63.3
None	12	57.1
RAMA	4	28.6
UBUDEHE Social category		
1	23	60.6
2	71	70.3
3	90	56.6
Can use MFP without husband will	109	68.1

**Table 4:** Factors associated with family planning use in Mugonero catchment area

Characteristics	Bivariate			Multivariate		
	cOR	p-value	95%CI	aOR	p-value	95%CI
<b>Age</b>						
15-24	1					
25-49	2.3	0.006	1.274-4.161	1.2	0.455	0.701-2.210
<b>Marital status</b>						
Living in union	1					
Not living in union	4.8	0.000	2.404-9.488	4.4	0.000	3.855-5.071
<b>Age at first delivery</b>						
13-19						
20-32	0.8	0.395	0.457-1.363			
<b>Education level</b>						
Not attended school						
Attended school	0.8	0.418	0.535-1.296			
<b>Unexpected pregnancy</b>						
Yes	1					
No	1.7	0.143	0.837-3.444			
<b>Social cluster</b>						
1	1					
2	1.5	0.295	0.685-3.480			
3	0.8	0.687	0.387-1.868			
4	Omitted					
<b>Experienced FP side effects</b>						
Yes	1					
No	0.6	0.113	0.320-1.128			
<b>Got pregnant while on contraception</b>						
Yes	1					
No	1.5	0.198	0.796-3.008			

## Part II. Qualitative results

### Knowledge of MFP in the community

Males and females were aware of MFP methods as well as traditional methods.

*“For women, there are injections for three months, counting to know fertility days, using five years injection; a common understanding between man and woman considering fertility period, the woman can inform her husband and avoid sexual intercourse to prevent pregnancy”.*

Some women reported that if the traditional method is correctly used, the outcome is the same as MFP. It depends on the level of collaboration between man and woman.

### Reasons for the MFP program

A disproportionate amount of economic resources versus demographic growth was cited as the main reason. One said:

*“In Rwanda, having many children, and considering our small field, we would not have enough resources to nourish children. At the moment, I am sure that the government is guiding us as a responsible man can guide his family... The government is advising that, according to your income, you should have a number of children that you can take care of and plan saving for them”.*

### Advantages of MFP

**Economic advantages:** The mother will have enough strength and time to work for the household:

*“MFP brings prosperity in the family. In my own experience, I spent six years on MFP, I started when the kid [was one year] old, I [next] gave birth while my previous kid was seven [years] old. The house we are living in we got it because I was in MFP. We achieved many things because I was on MFP. My husband was working on his side and me on my side because I had enough strength.”*

Respondents added that a household with two children, will cover the needs of children. Even the country would benefit as welfare to such households would not be necessary as because malnutrition would not be an issue.

**Social advantages:** The community is aware that by adhering to MFP and controlling birth, they would be able to take care of them, pay school fees, pay for medical insurance, feed them and providing to any other need of their children. When they are still young they are sent off to be cowherds or as fishermen.

### Reasons for not adhering to MFP

Ignorance was pointed out as a reason to refuse MFP. Some of the participants took extreme positions about MFP: One woman said:

*“People with low income are resistant to MFP, also have low intelligence. They have a mental disorder. People with enough resources have a high level of management skills. But one without resources is unable to plan”.*

Religion beliefs were one of the main reasons to prevent MFP. Some are saying that MFP is akin to killing children. They say that God commanded them to give birth and to multiply, and that using MFP is a sin. Pentecostal Church believers were the most common. If a believer is reported to be using MFP, the church leaders can take adverse decisions against her.

One woman was critical toward those who were using reasons of religion:

*“Church believers [should also] change their mind and accept MFP. We are praying [to] the same God, I advise them to use MFP. They don't know that if you have many children you are calling the devil to yourself. How can you pray while your kid is suffering due to your bad behavior?”*

Men thought that it was mostly women that need to be trained on advantages of MFP. They reported that there is no man who can be happy to have eight children, because the man is suffering alone to find subsistence of the household. As the woman is not suffering like a man, she wants to give birth because she is not working.

One woman reported that the first social category women are not willing to adhere to FP because they don't want to lose the support they are receiving from the government. she said:

*“I should have many children, one will come to you, another to someone else, for sure they will survive”.*

Side effects are among the most common obstacles to MFP. Side effects, like frequent menses, total absence of menses and coldness are common and prevent many women from using MFP. One said:

*“When there is total absence of menses women get sick, sudden death, when she is dying she explodes and bleeds so much, or she vomits, in few minutes she dies, although it could be poisoning, they will say that the reason is the absence of menses.”*

Some women ask to be tested first and then be given a FP method compatible with their bodies.

### Other issues of MFP

#### Disrespect of a wife to her husband

In the community, it is thought that when people see a woman utilising MFP and putting on a short dress, she is no longer busy with children and that the husband will no longer have authority over her.

#### Suspicion of unfaithfulness for men/women when women accept MFP

Men reported that, when a wife is taking MFP, if she sees her husband talking with another woman, she can say that her husband requested her to take MFP to have other children out of the household. After the FP period, she can abandon FP methods, and continue having children. For example, when a woman is on MFP, she can go anywhere and come back at home when she wants. She can go to the market and come back at 7:00 pm. This situation leads to troubles. She can say that she has no child to take care of.

#### Another issue reported in the survey is vasectomy

Almost all men think that vasectomy is castration. After vasectomy a woman who wants a child can leave the household, whilst men are afraid of being sorrowful over not being able to have a child again.

Another issue of FP is for genocide survivors. They would want to replace former family members.

A particular issue was raised by a nurse is a reporting issue; many women start the FP method in the Health Centre, and the follow up is then done in the community by CHWs, but they are not reported.

She said:

*“MFP service is provided in good conditions but the reason for low percentage coverage in our HF is not due to a lack of service but at my opinion is due to the incorrect reporting. I spent three months in this service, in this period I am challenged to write the report. In our registers, there are many enrolled but they are not in the follow up report. For example, in my village all women are using MFP, but none of them is appearing in the register”.*

#### Attitudes of men toward MFP

A woman said that men agree that their wives take FP. She gave an example of a man who was requesting his wife to

uptake FP, the wife refused, she got a child, after that they called care providers to help solve the problem, he said that he is not understanding why his wife refuses FP.

#### Advice of women to others who resist use of MFP

Women advise their counterparts not using FP to use them because they are left behind. There are socio-economic advantages for the woman.

#### Using MFP for women in secret

In the case that the husband prevents his wife from following MFP, almost all men and women supported the idea for a woman to adopt MFP without informing her husband.

### DISCUSSION

More than 70% of respondents were in the 25-44 age group. The vast majority of respondents were either married or cohabitating. Almost 90% of respondents had given birth. The MFP coverage in Mugonero catchment area was 61.3%. A big proportion of MFP users (47.1%) experienced side effects. Not living in the union was associated with a high proportion of MFP use. Almost all respondents were aware of MFP and know about its advantages and disadvantages.

The median number of born children, median number of living children and the median preferred number of children was the same (three children). This is slightly lower than the number reported as the fertility rate in Karongi District (3.9) where the Mugonero Hospital is located. The median age of first delivery (21) decreased a bit compared to the same indicator reported in Karongi District in 2015 (23.1); the desired number of children in our study was three compared to 3.2 for Karongi District [8]. The small difference could be the result of an effort to sensitize and to make use of MFP at the community level in the district. The proportion of women using MFP was greater than what was published in 2015 for Karongi District (39.7%). This difference is a result of efforts invested in the sensitization to the use of MFP. Community-Based Provision of FP was implemented as an initiative to increase the coverage of MFP [11]. Worldwide, 64% of married or in-union women of reproductive age were using at least one form of FP, but in African countries, this coverage was 33% [1]. Comparing to other countries in the region, the coverage of MFP in Mugonero catchment area is greater. For instance, it was 39.1% in Kenya in 2015 [5] and it was 27.3% in Uganda in 2016 [12]. This difference may result from campaigns organized in the country to sensitize women to adhere to MFP.

A woman not living in the union is associated with the use of MFP. Similarly, in Uganda the level of unmet needs of FP was highest among currently married women [13], whilst MFP side effects are factors for MFP discontinuation.

In our study, MFP side effects experienced over time have been reported at 47.1% and it was reported as a key factor of MFP discontinuation (12.4%).

At a national level, the discontinuation rate within 12 months was 28% [8]; it was 45% in Uganda [12] and 31% in Kenya [5]. Fear of side effects was mentioned as a barrier to use MFP. The same myth was reported in Kenya and DRC [7, 9, 14].

Shortage of MFP availability was only reported by 8.5%. Measures on this issue of accessibility and availability of MFP have been taken since some MFP methods are available at the community level. This is a common issue in many developing countries [1, 7, 10]. MFP discontinuation due to side effects was also reported in Kenya [14] and in China [15]. Another barrier to using FP reported by our respondents is a bad connotation in the community. They believe that a woman using MFP has the freedom to have many sexual partners because the woman could cheat on her husband without getting pregnant. Even a study conducted in Kenya found that some women and men believe that a young woman using MFP would want to live in promiscuity knowing that she will not get pregnant [14]. Some men consider themselves as heads of the household, with a responsibility to nourish household members. For this reason, they cannot accept MFP. This finding is shared with other men in other African countries. For example one study from the Democratic Republic of Congo (DRC) showed that men are responsible for the household; they support household members in everything including financial needs, therefore they are ones who tend to decide the number of children in the household [6, 14]. Religious beliefs were mentioned many times as a barrier for MFP uptake. This barrier was reported in a previous study conducted in the Kayonza District, Rwanda [9]. As we share the same religions with our neighboring countries, the same finding was reported in DRC [7]. Most of men and women surveyed in our study reported that having a lot of children is a burden to the household in terms of paying

school fees, feeding them and paying medical insurance. This kind of awareness was found even in DRC [7]. Despite the mentioned barriers to MFP, almost all women were willing to consider use of MFP in the future. This was the same as with other women in neighboring countries [7].

The study was conducted at a small scale. Thus, its findings cannot be extrapolated at the country level. However, as we have the same culture across the country, these findings could help in other settings in Rwanda. Behavior and beliefs can evolve over time. The findings of our study were based on self-reports from participants, it was not easy to verify if it was true or false that those who reported using MFP were really using it.

It was very difficult to find studies conducted on the same scale as ours. Many in this kind of study were conducted at the national level.

In conclusion, MFP coverage in Mugonero catchment area was by default the MFP of Karongi District. Our study revealed that MFP in Mugonero catchment area is higher than expected; misconceptions mainly related to side effects and beliefs are common barriers of MFP. Suspicion of unfaithfulness between couples can jeopardize MFP use. In the future, what's needed is to organize an open discussion with church leaders (Pentecostal and Catholic Churches) that are against MFP in order to request them to remain silent and neutral on the matter instead of forbidding their members to use MFP. Training and sensitization to MFP use is needed for couples and proper side effect management is needed. Organize a mentorship in HFs to improve MFP delivery, recording and reporting, and train CHWs to provide accurate reports on MFP.

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