Original Article

Male Involvement in Family Planning Services Utilization and Associated Factors in Musanze District, Northern Rwanda

Emmanuel Ndahiro Manirafasha[1*,2], Clemence Nishimwe[3]

[1]*Public Health, Mount Kenya University, Kigali, Rwanda*
[2]*Center for Nursing and Midwifery, University of Global Health Equity, Kigali, Rwanda*
[3]*Nursing, College of Health Sciences, Mount Kenya University, Kigali, Rwanda*

***Corresponding author:** Emmanuel Ndahiro Manirafasha. Public Health, Mount Kenya University, Kigali, Rwanda. Email: emmyndahiro14@gmail.com, nishimwec@gmail.com.ORCID: https://orcid.org/0009-0002-0364-0276

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Abstract

Background
Male involvement in family planning (FP) is crucial for reducing unplanned pregnancies, unsafe abortions, and maternal and child mortality. As primary decision-makers in many African households, men significantly influence women's use of contraceptive methods. However, male participation in FP services remains limited for various reasons. This study aims to assess male involvement in FP services and associated factors in Musanze district, Northern Rwanda.

Methods
A cross-sectional study was conducted on 397 married men in Musanze district. Participants were selected using simple random sampling. Data were collected through pre-tested, interview-administered questionnaires. Multivariable logistic regression analysis identified factors associated with male involvement in FP services.

Results
The overall level of male involvement in FP services was 36.7%. Male involvement was influenced by age (OR=6.199, 95% CI: 1.727-22.251), employment status (OR=2, 95% CI: 1.24-3.224) and distance to the FP facilities (OR=0.071, 95% CI: 0.009-0.579).

Conclusion
Male involvement in FP services in Musanze district is low. Factors such as age, employment, and distance to FP facilities influence male involvement in FP. Integrating men into existing FP services could enhance utilization and sustainability.

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Keywords: Male involvement, Family planning services, Musanze district, Northern Rwanda

Introduction

Family planning (FP) services have long been recognized as a fundamental component of public health programs worldwide, contributing to the improving maternal and child health, reducing unintended pregnancies, and overall enhancing reproductive health outcomes. Family planning can be defined as a human right that allows everyone to space and determine the number of children using FP methods,[1] While these services are often directed toward women, the role of men in FP is increasingly acknowledged as a critical factor in its success and effectiveness,[2] Globally, 1.1 billion women of reproductive age (15-49 years) in 2019 planned to utilize FP methods, yet 190 million women had an unmet need for FP, with rates greater in Sub-Saharan Africa (SSA) than elsewhere in the globe.[3]

Despite significant progress over the years, many women worldwide want to prevent pregnancies, but they and their partners are not using contraception. Some of the reasons for this unmet need include poor quality of service, a lack of a variety of methods, fear of opposition from partners, and concerns about side effects and health concerns among others.[4] One crucial element to consider is male involvement in FP. Male involvement in FP extends beyond the promotion of condom use and vasectomies as male contraceptive methods. It encompasses the active support provided by men to their partners in contraception, their advocacy for FP within their social circles, and their efforts to shape policy environments that foster the development of programs aimed at male involvement.[5] Numerous studies have indicated that the acceptance and continuity of FP services tend to be more successful for women when men actively participate.[5,6] Traditionally, FP programs had focused primarily on women; however, men are regarded as primary decision makers about sexual activity, and the desired number of children within most African communities and their involvement in FP is vital to the contraceptive method's acceptance and continuation.[7,8] The benefit of involving men in FP services could improve women's FP use and maternal outcomes. Male involvement could avert an estimated 830 daily maternal deaths in sub-Saharan Africa.9] The lack of male involvement in FP is a contributing factor to low contraceptive usage and a high unmet need for FP in Africa. When men actively participate in FP, it has the potential to reduce maternal mortality by 32% and child mortality by 10%.[10]

Despite the formation of FP policy initiatives, male participation in FP services utilization is still considered low in most SSA nations. According to the study done in Ethiopia, only 12.5% of men are involved in FP services. The reasons mentioned for low male involvement in FP include lack of knowledge of FP methods, fear of side effects, desire to have more children and cultural and religious prohibition,[10] Strengthening male participation in FP services utilization and reproductive health issues is a significant public health initiative and key in achieving sustainable development goal target 3 (SDGs) of reducing maternal mortality. A study conducted in Uganda reported that when men are engaged in FP services utilization, women are likely to be motivated in FP acceptance, use, and continuation. It was also discovered that 34.0% of women had insufficient partner involvement in FP, 80.6% believed that discussing FP with a partner has a good effect on their contraceptive use, and 93.5% thought that males play a role in FP,[11] as a result, men must be consistently included in the use of FP services.

Rwanda has made FP a central component of development and poverty reduction.[12] The government has been promoting FP through various strategies including; training providers, conducting mass media FP campaigns, strengthening health facilities by making contraceptives more widely available and affordable and increasing contraceptive funding and support from the government.[13]

However, according to the 2019-2020 Rwanda Demographic and Health Survey (RDHS), only 64% of married women use FP with 58% using modern methods and 6% using traditional methods,[14] On the other hand, the contraceptive discontinuation after one year of use is 30% and the unmet need for FP continues to be high with 14%. [15] There is a high unmet need for FP hence the need to involve the male partner in FP programs.

A low male involvement in MCH services is a case in the Musanze district. According to Karamage in 2016, the level of male involvement in MCH services was still low as most of them thought that it was a woman's affair. In addition, men did not accompany their partners in MCH services, including FP services due to fear of facing friends and relatives, behaviors of staff at health facilities, long waiting times, unavailability of physical space to accommodate men and low level of education stated as barriers to male involvement in MCH services.[16] Failure to involve males in FP services utilization can have severe consequences in a society like Rwanda; even if women are motivated to use FP methods, the non-involvement and opposition from husbands contribute to the high of unmet, low contraceptive use and discontinuation of FP methods.[12] However, access to FP among men is limited by many factors that are not fully identified. The level of male involvement in FP services and associated factors in Musanze district is not well recognized; the only data available is for male engagement in MCH services. To address this gap, this study seeks to assess the level of male involvement in FP services utilization and associated factors in Musanze district, Northern Rwanda.

Methods

Study design and setting

A cross-sectional study was conducted from August to December 2023 in Musanze district, Northern part of Rwanda. Musanze district is one of the five districts of Northern Province. In the north, it is bordered by Uganda and Gakenke district to the south, Burera district to the east and Nyabihu district to the west. According to the Fifth Rwanda Population and Housing Census (2022), it has a population of 476522 people: 227340 males, and 249182 females with a population density of 1154/ km^2. The district has both urban and rural areas with 234,258 people living in urban areas while 242,264 live in rural areas, and the district has an area of 530 km^2. It has 15 sectors, 68 cells and 432 villages. The population of men aged 21 years and above is estimated to be 74801,[17] The district was selected because the contraceptive prevalence rate ranks third lower (70%) in the Northern province with only 66% using any modern FP method and 4% using the traditional method, the total fertility rate (3.5 children). [14]

Population and Eligibility Criteria

In this study, the target population consisted of married men aged 21 years and older, who had female partners of reproductive age and lived in Musanze district. The researcher understands that men aged 21 and above are usually in committed relationships and are more likely to be involved in sexual and reproductive activities, which makes them a suitable group to gather information about family planning. The study participants were approached during a weekly community meeting held in the Musanze district every Tuesday. Inclusion criteria for participants in the study required voluntary consent, being married men aged 21 or older with a partner in the reproductive age group, and residing in Musanze district. Exclusion criteria involved refusal to participate, being unable to communicate or hear, reporting infertility, or having a partner out of the reproductive age range (15-49 years).

Sample size determination

The sample size was determined using the Yamane formula for population (Yamane, 1967).

$$n = \frac{N}{1+N.(e)^2}$$

According to the National Institute of Statistics of Rwanda; Musanze district profile (NISR, 2023),

the estimated population of males aged 21 and above was 74,801.[17]

Since, the study population (N) is 74801, by using a 95% confidence interval and sampling error of 0.05, the calculation becomes,

n= 74801/1+74801(0.05)2=397

Where by

N: study population n: sample size e: sampling error

Therefore, the sample size in this study becomes 397

Sampling procedure

Three (3) out of 15 sectors were purposively selected in Musanze district, Northern Province based on the researcher's availability, geographical location, and financial resources. One sector was in an urban area, while the other two were in rural settings with different socio-demographic characteristics. The study included 397 men who were 21 or older and met the study criteria. In this study, the participants were selected using a probability sampling technique known as simple random sampling. This means that each element in the larger population had an equal chance of being chosen for the sample. This ensures that the sample accurately represents the entire population, making it a reliable method for drawing conclusions and making statistical inferences. Selecting respondents began by assigning a unique identifier (ID) number to each married man in the population during data collection visits. Then, a computer program called statistical software package R with a random number generator was used to generate a number within the range of the total study participants. This guaranteed that each married man had an equal opportunity to be selected. The randomly generated numbers were then matched with the unique identifiers assigned to the married men, and the individuals corresponding to these random numbers were included in the sample.

Study variables and measurements

The primary outcome variable was the level of male involvement in FP services utilization (high involvement or low involvement). The predictor variables were socio-demographic factors (age, education level, religion, occupation, and marital status) and healthcare-related aspects such as proximity to FP facilities, concerns about side effects, and the availability of male contraceptive methods. Male involvement in FP was computed from the following six "Yes" or "No" questions: men's use of FP methods, accompanying partner to FP facility, discussing with a partner on FP issues, approving partner's use of FP, providing support to partner to access FP services, and encouraging the use of FP to partner. Based on the summative score of the question designed to determine male involvement through spousal communication and approval, men with scores 0-3 were considered as having low involvement in FP and 4-6 as high involvement. This scoring level were derived from researchers.[4,10]

Data collection procedure

A questionnaire, which was adopted by researchers,[7,18] was used by the researcher to collect data from respondents. The questionnaire was primarily in English and was also translated into Kinyarwanda. It consists of closed and semi-closed questions. The questionnaire is divided into three sections, each addressing a specific objective; To determine the current level of male involvement in family planning services utilization in Musanze district, Northern Rwanda; To identify the Sociodemographic factors associated with male involvement in family planning services utilization in Musanze district, Northern Rwanda; To determine the health service-related factors associated with male involvement in family planning services utilization in Musanze district, Northern Rwanda. These sections provide quantifiable answers and investigate the level of male involvement in FP service utilization, as well as socio-demographic and health service-related factors among the participants.

Reliability of the Instruments of the Study

The reliability of an instrument refers to its

ability to consistently produce the same results when used multiple times in the same situation.[19] In research, this means measurements on similar individuals under the same conditions should be consistent. To ensure reliability, researchers conduct a pre-test by distributing 10% of the questionnaires to target respondents. This pre-test identifies and removes any ambiguities or unnecessary items from the questionnaire.

Validity of theinstruments of the study

Validity refers to how accurately a research instrument measures what it is intended to measure,[19] to ensure validity, researchers gather feedback from academicians and research supervisors to review the instrument, addressing potential confusion and aligning it with research objectives. A pilot study in the Kinigi sector, similar to the selected respondent sectors, tested sampling feasibility, tool suitability, and survey question clarity. Adjustments based on the pilot study enhanced the methodology. Respondents from the pilot study were excluded from the main investigation.

Data analysis

The analysis was performed using Stata software version 18. Descriptive statistics using frequency tables were used for categorical data, while mean and standard deviation were used to summarize numerical data. Multivariable logistic regression analysis was applied to identify factors associated with male involvement in family planning. Odds ratios with a 95% confidence intervals were reported, and a p-value less than 0.05 was considered statistically significant.

Ethical consideration

The study adhered to the principles outlined in the Declaration of Mount Kenya University. Initially, ethical approval was obtained from Mount Kenya University's ethical review committee (Reference number: MKU 04/PGS&R/0927/2023). After getting permission to carry out data collection from Musanze district administration and local leaders; the detailed objectives of the study were communicated to all participants, and written informed consent was obtained from each individual. All data collected from respondents were treated confidentially, with no names recorded on the questionnaire, and stored securely with password protection on a computer.

Result

Demographic characteristics of respondents

Table 1. Sociodemographic characteristics of the respondents

Variables	Frequency (n=397)	Per cent (%)
Age group		
21-31	95	23.93
32-42	178	44.84
43-53	109	27.46
54-64	15	3.78
Education		
No education	44	11.08
Primary	122	30.73
Secondary	183	46.10
University	48	12.09
Religion		
Other	103	25.94
Catholic	188	47.36
Adventist	82	20.65
Muslim	24	6.05
Marital status		
Married illegally	228	57.43
Married legally	169	42.57
Employment status		
Employed	193	48.61
unemployed	204	51.39
Number of living children		
0-5	371	93.45
6-10	26	6.55

The study's respondents had a mean age of 38.103 years (SD=7.838). The largest proportion fell within the 32-42 age bracket (44.84%), followed by 27.5% between 43 and 53 years old.

A notable 24% of male participants were aged 21-31, with 3.8% falling into the 54-64 age range. Demographic profiles varied: 46% had secondary education, 30% had primary, 12% university, and 11% no education. Religious affiliations comprised 47% Catholic, 26% other Christian denominations, 20.6% Adventist, and approximately 6.05% Muslim. Regarding marital status, 57% were in an illegal marriage, while 42.5% were legally married. Employment status showed 51.4% employed and 48.6% unemployed. Regarding number of children, 93.4% reported having 0-5, while 6.5% had 6-10. The summarized sociodemographic profile of the respondents can be found in Table 1.

Level of male Involvement in Family Planning Services Utilization

The results presented in Table 2 offer a detailed examination questions designed to assess male involvement in FP among a sample of 397 individuals. Table 2 indicates a low prevalence of FP method usage, with only 11.84% reporting that they used some form of FP, contrasting sharply with the 88.16% who did not. Communication about FP between partners is almost evenly split, with 48.61% having discussed FP with their partners, while 51.39% had not. Support for a partner's access to FP services is less common, with only 37.28% expressing support compared to 62.72% who did not. Approval of FP use by a partner is similarly limited, with 42.82% approving. Physical support in the form of accompanying a partner to FP facilities is low, with just 14.61% doing so, while 85.39% did not. Encouragement of FP use is also limited, with only 35.52% actively encouraging their partners.

The study reveals that only 36.78% of married men in Musanze district were highly involved in family planning services, but just 11.8% used male FP methods, predominantly condoms (74.5%). Smaller percentages using withdrawal (12.8%), vasectomy (8.5%), and other methods (4.3%). These findings indicate a need for increased efforts to increase male participation in FP services and diversify the methods used, Figure 1.

Table 2. Distribution of male involvement in family planning services

Variables	Frequency (n=397)	Percent (%)
Using any FP method(s)		
Yes	47	11.84
No	350	88.16
Discussed FP with your partner		
Yes	193	48.61
No	204	51.39
Support for your partner to access FP services		
Yes	148	37.28
No	249	62.72
Approve FP use by partner		
Yes	170	42.82
No	227	57.18
Accompany your partner to the FP facility		
Yes	58	14.61
No	339	85.39
Encourage the use of FP by partner		
Yes	141	35.52
No	256	64.48

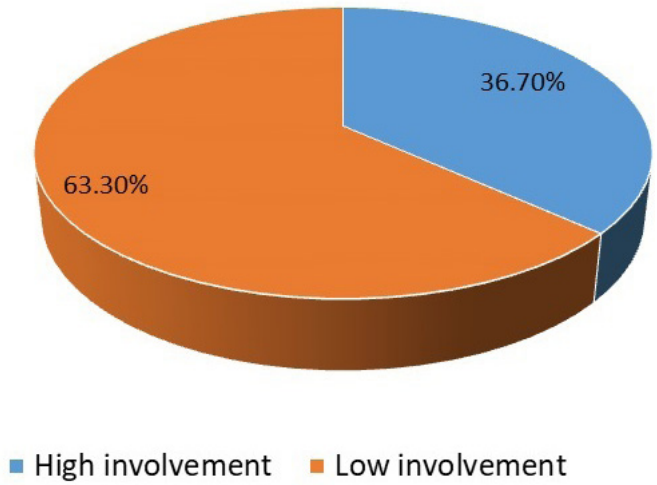

Figure 1. level of male involvement in family planning services utilization

Bivariate analysis between demographic characteristics and health services related factors and male Involvement in family services utilization

Table 3 presents bivariate analysis on factors associated with male involvement in family planning services utilization in Musanze district, Northern Rwanda. It was shown that age, employment status and distance to FP facility have a significant statistical relationship with male involvement in FP. Table 3.

Table 3. Bivariate analysis of demographic characteristics and health services related factors and male involvement in family services utilization

Variables	Male Involvement in Family Planning		Chi-square	P-value
	Low	High		
Age group				
21-31	77	18	17.46	<0.001
32-42	105	73		
43-53	61	48		
54-64	8	7		
Education				
No education	24	20	12.94	0.0048
Primary	87	35		
Secondary	119	64		
University	21	27		
Religion				
Other	63	40	8.90	0.0306
Catholic	116	72		
Adventist	50	32		
Muslim	22	2		
Marital status				
Married illegally	157	94	7.32	0.0068
Married legally	71	75		
Employment status				
Employed	136	115	8.47	0.0036
unemployed	57	89		
Number of living children				
0-5	231	20	2.25	0.1340
6-10	140	6		
Distance to a health facility				
Very close(less than 5 km)	227	145	12.33	<0.001
Very far (more than 5 km)	24	1		
Fear of side effects				
Yes	9	14	6.10	0.0136
No	242	132		
Availability of FP in the community				
Yes	12	133	2.26	0.1029
No	239	13		

Multivariable analysis of factors associated with male involvement in family planning

Table 4 shows that men aged (54-64) are six times more likely to have high involvement in FP compared to the rest of age group OR=6.199, 95%CI: 1.727-22.251, P<0.001. It was shown that employment status has a positive association with male involvement in FP; employed respondents were two times as likely to have higher involvement in FP as the unemployed (OR= 2, 95% CI: 1.24-3.224). Distance to a health facility was negatively associated with male involvement in FP with the odds ratio of approximately 0.071 (95% CI: 0.009-0.579) for men living farther (more than 5 km) from a health facility than those living closer. To summarize, age, employment status and distance to health facilities collectively contribute to increased probabilities of male involvement in FP services. However, there is no statistically significant between male involvement in family planning and education level, religion, marital status, number of living children, fear of side effects and availability of FP in the community.

Table 4. Multivariable analysis of factors associated with male involvement in family planning

Variable	Male involvement		P-value	Odds Ratio	Sig
	Low f (%)	High f (%)		AOR (95% CI)	
Age group (years)					
21-31	77(81%)	18(19%)		Ref	
32-42	105(58.99%)	73(41.1%)	<0.001	3.134(1.656-5.934)	**
43-53	61(55.99%)	48(44%)	<0.001	5.201(2.553-10.599)	**
54-64	8(53.33%)	7(46.67%)	0.005	6.199(1.727-22.251)	*
Education					
No education	24(9.56 %)	20(13.7 %)		Ref	
Primary	87(34.66%)	35(23.97 %)	0.008	0.331(0.147-0.745)	***
Secondary	111(47.4 %)	64(43.8 %)	0.075	0.495(0.229-1.072)	
University	21 (8.37 %)	27(18.4 %)	0.894	0.937(0.362-2.426)	
Religion					
Other	63 (25.1%)	40(27.4%)		Ref	
Catholic	116(46.2%)	72(49.32%)	0.711	0.902(0.522-1.558)	
Adventist	50(19.9%)	32(21.92%)	0.996	1.002(0.514-1.953)	
Muslim	22(8.76%)	2(1.37%)	0.086	0.226(0.041-1.237)	***
Marital status					
Married illegally	157(62.55%)	71(48.63%)		Ref	
Married legally	94(37.45%)	75(51.37%)	0.565	1.148(0.716-1.841)	
Employment status					
Employed	115(45.18%)	89(60.96%)	0.004	2(1.24-3.224)	*
Unemployed	136(54.18%)	57(39.04%)		Ref	
Number of living children					
0-5	231(92.0%)	140(95.89%)		Ref	
6-10	20 (7.97%)	6(4.11%)	0.11	0.42(0.145-1.217)	
Distance to a health facility					
Less than 5 km	227 (90.44%)	145(99.32%)		Ref	
More than 5 km	24 (9.56%)	1(0.68%)	0.013	0.071(0.009-0.579)	
Fear of side effects					
Yes	9(3.59%)	14(9.59%)	0.087	3.444(0.835-14.202)	
No	242(96.41%)	132(90.41%)		Ref	
Availability of FP in the community					
Yes	12(4.78%)	13(8.9%)	0.904	0.916(0.222-3.78)	
No	239(95.22%)	133(91.1%)		Ref	

Significance: *** p<0.001, ** p=0.01, * p<0.05. Ref: Reference

Discussion

This study aimed to determine the level of male involvement in FP services utilization and associated factors in Musanze district, Northern Rwanda. Determining the level of male involvement in FP services is crucial for evaluating the effectiveness of FP initiatives. The findings indicated that level of male involvement in FP in Musanze district is low (36.78%). This finding is consistent with previous studies conducted in Ethiopia, where a similar percentage (39.9%) of low level of male involvement in FP services utilization was observed,[20] and Bangladesh (40%),[21] indicating a comparable level of male involvement in FP. However, it contrasts sharply with the more recent surveys reporting lower rates, such as 17.5% in Tanzania,[8] 12.5% in Ethiopia,[10] 17% in the Democratic Republic of Congo,[22] and 8% in Indonesia,[23] In Indonesia, there is a widely held belief that FP is mainly the responsibility of women. This perception is further reinforced by the focus of national FP programs on women.

Furthermore, the significant differences in the use of FP services throughout these countries partly is explained by factors such as place of residence, region, and socioeconomic status. Another potential factor contributing to these differences could be the variations in population characteristics and the differences in sample sizes. Unexpectedly, 74% of men surveyed who used contraception relied solely on condoms, indicating a limited adoption of alternative male contraceptive methods. This finding is in line with the study conducted by Frederick in Kenya,[7] This inclination could be linked to the scarcity of male contraceptives in rural communities. Therefore, it is imperative to enhance initiatives that promote awareness and accessibility to permanent FP options, especially for those unequivocally committed to avoiding future parenthood.The study revealed a significant association between male involvement in FP and age (p-value < 0.05). Men in the age group of 54-64 years were found to be almost six times more likely to be involved in FP services compared to those in the age group of 21-31 years. However, this finding contradicts the study by Green and J. Chens on male involvement in reproductive health in Indonesia. Their study did not identify any association between the age of the respondents and involvement in contraceptive uptake. Instead, they found that confounding variables such as education and age influenced involvement. [24]

The finding of this study showed that a higher educational status of the husband was positively associated with male involvement in FP (p-value < 0.0048). The possible explanation is that educated men are more likely to have good knowledge of family planning, which initiates their involvement. This aligns with a study conducted in Mozambique, which found a significant association between the level of education and FP utilization.[25] The results indicate that legally married men have approximately twice the odds of being involved in FP compared to their counterparts in illegal marriages (OR=2; 95% CI: 0.716-1.841). This finding is consistent with prior research suggesting that married men tend to utilize FP methods more than those who are single, widowed, separated, or cohabiting, as evidenced by Kerry et al.'s study conducted in the USA in 2015,[22] Likewise, employment status demonstrates a significantly correlates with male involvement in FP. Employed men exhibited two times higher odds of involvement in FP (OR= 2, 95% CI: 1.24-3.224) compared to unemployed. The fact that occupation is associated with FP utilization aligns with a study conducted by Ling, which found that FP use was associated with occupation.[26] The findings suggest that residing closer to FP service delivery points is significantly associated with increased engagement and utilization of FP services, in contrast to those living further away. Men living more than 5 km from health facilities showed markedly reduced

odds of male involvement compared to those residing within 5 km [AOR] = 0.071, 95% CI: 0.009-0.579). These findings are similar to the study conducted in Tanzania, where the distance from FP facilities significantly affects the use of FP,[8] It is also supported by the study conducted in Mozambique, where men living far away from the clinics tend not to use FP methods due to poor accessibility,[25] This finding is also supported by Ochako et al. in Kenya, who similarly highlighted long distance from FP service providers as a significant obstacle to the utilization of FP services. The negative association between distance and FP utilization is consistent, as individuals residing far from these services often face challenges accessing them, resulting in decreased usage of FP methods,[27] The data analysis revealed that the fear of side effects affects male involvement in FP. Respondents who experienced fear of side effects were less likely to have high involvement in FP than those who had no fear of side effects. In Tanzania, the fear of side effects was found to be influencing the utilization of FP methods also reports this observation,[7] Again, a similar observation was reported from the study done in Uganda, where some men believe that they cannot support their partners to use FP methods because using FP is associated with bleeding.[28]

Limitations of the study

The study aimed to assess male involvement in FP services utilization and associated factors in Musanze district, Northern Rwanda, and identify related factors. Despite its contribution, the study's limitation lies in its focus on one district, limiting generalizability. Future research recommendations should include nationwide studies.

Conclusion

Male involvement in FP services utilization in the Musanze district was low, at 36.7%. It emphasized the critical role of FP in reducing maternal mortality by limiting births and reducing mortality risks for women. Factors like age, education, occupation, distance to FP centres and fear of side effects influenced male involvement in FP. Male condom use was predominant. Addressing these factors and developing strategies to improve them is crucial for promoting FP utilization and improving maternal health.

Authors' Contributions

This work was carried out in collaboration between all authors. ENM and CN participated in conceiving the study and in the development of data collection tools. ENM carried out data collection. CN participated in the data analysis and drafting of the manuscript. All authors read and approved the final manuscript.

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Conflicts of interest

All authors declare no conflict of interest.

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