Journal of Medicine, Nursing & Public Health

Family Planning Uptake and Associated Factors among Women of Reproductive Age in Rusizi District, Rwanda

Umutesi Viviane & Japheths Ogendi, PhD

ISSN: 2706-6606

Stratford Peer Reviewed Journals and Book Publishing
Journal of Medicine, Nursing & Public Health
Volume 6||Issue 3||Page 23-39||October||2023|
Email: info@stratfordjournals.org ISSN: 2706-6606

Family Planning Uptake and Associated Factors among Women of Reproductive Age in Rusizi District, Rwanda

[*1]Umutesi Viviane

Mount Kigali University, Rwanda, School of Public Health

*Corresponding author's email: vumutesi@gmail.com

[2]Japheths Ogendi, PhD

Mount Kigali University, Rwanda, School of Public Health

How to cite this article: **Umutesi, V. & Ogendi, J. (2023). Family Planning Uptake and Associated Factors among Women of Reproductive Age in Rusizi District, Rwanda.** ***Journal of Medicine, Nursing & Public Health*****, 6(3), 23-39.** https://doi.org/10.53819/81018102t4209

Abstract

The global landscape of contraception use, particularly in developing countries, presents a concerning situation. Approximately 123 million women in these regions, who wish to space and limit their births, do not use contraception. This leads to 38% of pregnancies worldwide being unwanted, and a staggering 60% of these unwanted pregnancies result in induced abortions. Lack of information about available family planning services is a significant obstacle, with an estimated 214 million women facing this barrier. The overall prevalence of contraceptive use stands at 22%, varying widely from 3.5% in the Central African Republic to 49.7% in Namibia. This study focused on the low family planning uptake in the Rusizi district of Rwanda. It involved 382 women of reproductive age and 18 key informants. The research adopted quantitative and qualitative data collection methods, and the analysis revealed several insights. Notably, the majority of the participants were women, most of whom fell within the 31 to 40 age group and had limited education. Financial constraints and the need for spousal approval were identified as key factors affecting family planning usage. Multivariable analysis showed that women educated in technical and vocational schools, living in low-income households, and obtaining their husband's approval had significantly higher odds of using family planning. Interview data indicated that inadequate information on family planning services and financial limitations were substantial barriers. The study's primary recommendation is to target women in low-income groups for education, income enhancement, and empowerment to enable them to make informed decisions about their sexual and reproductive lives. This approach involves collaborative efforts with their husbands.

Keywords: *Family Planning Uptake, Reproductive Age, Rwanda*

1.0 Introduction

Worldwide, nearly 123 million women, mainly in developing countries, do not use contraception despite having expressed the wish to space births and limit the number of their children. Of all the pregnancies that occur every year in the world, 38% are unwanted. Also 6 out of 10 pregnancies lead to induced abortion. As a result, the use of voluntary and safe family planning is therefore a fundamental right. Family planning is an essential factor in reducing poverty. Yet an estimated 214 million women who want to use effective and safe family planning methods are unable to do so because they are unable to have the information related to FP and services they need in the same way or are not supported by their partner or their community (Guttermacher Institute, 2017).

The issue of family planning uptake concerns the whole world, as non-spaced pregnancies endanger the lives of mothers, responsible for about a third of birth deaths (World Vision, 2022). Family planning is an effective means to improve the health of women and their children. Since 1990, the number of modern contraceptive users has nearly doubled globally. Nevertheless, 164 million women desire to delay or avoid pregnancy but are not using any birth control methods (United Nations, 2022). Globally, 55% of women without access to family planning services seek birth spacing, while 45% aim to limit their pregnancies (Attanasso et al., 2019). Alarmingly, approximately 121 million pregnancies worldwide each year are unintended (UNFPA, 2022).

In Asia, out of 211 million yearly pregnancies, 81 million are unplanned, leading to induced unsafe abortions (Fatemeh Najafi et al., 2013). Despite increasing trends in family planning usage worldwide, particularly in Asia (62%) and Latin America (67%), sub-Saharan Africa, including Tanzania, presents a contrasting scenario with an average usage of less than 20% (Tolefac et al., 2018). Furthermore, in sub-Saharan Africa, less than 30% of fertile women use family planning (WHO, 2020).

When examining the factors negatively impacting family planning uptake, a study conducted in Tanzania identified low levels of education, religious affiliation, and low family income as factors associated with low utilization of family planning services (Mohamed Kassim et al., 2022). Furthermore, in Ghana, a study on factors related to low family planning method usage found that the parity and educational level of respondents were statistically associated with family planning uptake ($P<0.05$). The study also reported that husbands' resistance to family planning and misconceptions about it accounted for 90% and 83% of the reasons for not using family planning methods (Paschal Awingura Apanga et al., 2015). Family planning uptake rates remain low in certain districts, even though Rwanda has achieved a satisfactory rate of 58% (NISR, 2021). For instance, in the Western Province, the district of Rusizi has reported a low family planning method uptake rate (46.8%), in contrast to the national level of 58% (NISR, 2021).

1.1 Statement of the Problem

In developing countries, the utilization of family planning services has been shown to prevent unintended pregnancies and reduce maternal and child mortality. However, the usage of these services remains low. Approximately 123 million women, mainly in developing nations, do not use contraception despite expressing a desire to control family size and spacing births. These unintended pregnancies are responsible for a significant proportion of maternal and child deaths, and about half of all pregnancies worldwide are unintended.

In Nigeria, family planning uptake has remained low, with uptake rates ranging from 10.3% to 66.8%. Several challenges and barriers contribute to this low uptake, including factors such as

education, the desire for more children, partner disapproval, concerns about side effects, religious beliefs, cultural disapproval, age, marital status, socio-economic status, residence, and lack of awareness, embarrassment, domestic violence, and sexual factors.

In the case of Rwanda, family planning uptake varies by district, with Rusizi district having a relatively low uptake rate of 46.8% compared to the national average of 58%. Limited access to contraceptive methods due to social, cultural, and religious factors, as well as rumors and taboos, plays a role in the low uptake. Even at the national level, there is room for improvement, as only 58% of women in Rwanda use contraceptives. Various strategies have been attempted to increase family planning uptake, but success has been limited. Notably, there is a lack of studies focused on family planning uptake and associated factors in Rusizi District.

1.2 Research Objective

The study assessed the uptake rate and factors associated with family planning uptake among women of reproductive ages in 6 selected health centers of Rusizi district of Rwanda.

2.0 Literature Review

2.1 Theoretical Review

2.1.1 The Concept of Family Planning Uptake

The definition of family planning uptake may differ from one to another. Family planning uptake in this study refers to the participant who reported to use any type of contraceptive method within the current three months and be able to mention it during the interview. Going back in time, the history of family planning includes methods employed by ancient civilizations and societies to prevent conception or to terminate previously established pregnancies (Robin, Larsen & Levin, 1947). The ancient societies of Egypt, Greece, and Rome practiced birth control methods as, in general, they preferred small family sizes (Zouhair & Mahmoud, 2022). Family Planning was established in 1936. The Sex Hygiene and Birth Regulation Society was its original name. Contraception was simple and unreliable at the time (New Zeland Family Planning, 2023). Birth control, as well as abortion, were discovered in Ancient Egypt and Mesopotamia as early as 1850 BC. Papyrus scrolls were discovered to contain instructions for making birth control using honey, acacia leaves, and lint as a cervical cap to prevent sperm from entering the womb (Pendia Health, 2023).

As of 1998, 179 states endorsed access to contraception, representing 92 percent of governments where more than 99 percent of the world's population lived (David, Nancy, Julie, & Sally, 2013). Governments provide extensive assistance for family planning, and most contraceptive users in developing countries rely on their governments for contraceptive supplies and services, however the private sector, including pharmacies and private organizations, also provides contraceptive supplies and services (Judith R. Seltzer, 2002).

2.1.2 Background of family planning uptake

Over the last two decades, the number of women who wants to utilize family planning has risen dramatically, from 900 million in 2000 to approximately 1.1 billion in 2020. As a result, the number of women using a modern contraceptive technique grew from 663 million to 851 million, and the contraceptive prevalence rate rose from 47.7 to 49.0%. By 2030, an additional 70 million women are expected to be added (UN Department of Economic and Social Affairs, 2020).

The proportion of women of reproductive age whose family planning needs are covered has gradually improved in recent decades, rising from 73.6 percent in 2000 to 76.8 percent in 2020 (UN Department of Economic and Social Affairs, 2020). The following factors are associated with this slow increase: a limited choice of methods; limited access to services, particularly among young, poorer, and unmarried people; fear or experience of side effects; cultural or religious opposition; poor quality of available services; users' and providers' bias against some methods; and gender-based barriers to accessing services. As these barriers are removed in some countries, there has been an upsurge in demand for modern methods of contraception.

2.1.3 Contraceptive methods used in Rwanda

In Rwanda, family planning methods are offered both at health facilities and in communities by trained healthcare providers. These methods include a variety of reversible and non-reversible options:

2.1.3.0 Reversible Family Planning Methods

Combined Oral Contraceptives (COCs): These pills prevent ovulation and are effective at preventing 0.3 births per 100 women per year when used consistently and correctly (World Health Organization, 2018).

Progestogen-Only Pills (POPs): Also known as "the minipill," these pills work to inhibit sperm and egg contact and prevent ovulation. They are similarly effective at preventing 0.3 pregnancies per 100 women per year when used consistently and correctly (World Health Organization, 2018).

Implants: Implants thicken cervical mucus, preventing sperm and egg from meeting and thereby preventing ovulation. They are effective at preventing 0.1 pregnancies per 100 women per year when used consistently and correctly (World Health Organization, 2018)..

Progestogen-Only Injectables: These injections thicken cervical mucus to block sperm and egg contact and prevent ovulation, with an effectiveness of preventing 0.2 pregnancies per 100 women per year when used consistently and correctly (World Health Organization, 2018)..

Monthly Injectable or Combined Injectable Contraceptives (CIC): These injections prevent ovulation and have an effectiveness of preventing 0.05 pregnancies per 100 women per year when used consistently and correctly (World Health Organization, 2018).

Combined Contraceptive Patch and Combined Contraceptive Vaginal Ring (CVR): These methods prevent ovulation and are effective at preventing 0.3 pregnancies per 100 women per year when used consistently and correctly (World Health Organization, 2018).

Intrauterine Device (IUD): Copper Containing: The copper-containing IUD damages sperm and prevents it from meeting the egg, with an effectiveness of preventing 0.6 pregnancies per 100 women per year when used consistently and correctly (World Health Organization, 2018).

Intrauterine Device (IUD) Levonorgestrel: This type of IUD thickens cervical mucus to block sperm and egg contact and is effective at preventing 0.5 pregnancies per 100 women per year when used consistently and correctly (World Health Organization, 2018).

Male Condoms: Male condoms serve as a barrier between sperm and egg, with an effectiveness of preventing 2 pregnancies per 100 women per year when used consistently and correctly (World Health Organization, 2018).

Female Condoms: Similarly, female condoms act as a barrier and are effective at preventing 5 pregnancies per 100 women per year when used consistently and correctly (World Health Organization, 2018).

Lactational Amenorrhea Method (LAM): This method prevents ovulation and is highly effective, preventing 90 pregnancies per 100 women in six months when used consistently and correctly (World Health Organization, 2018).

Standard Days Method (SDM): SDM helps avoid pregnancy by avoiding unprotected vaginal sex on the most fertile days and is effective at preventing 50 pregnancies per 100 women per year with consistent and correct use (World Health Organization, 2018).

Basal Body Temperature (BBT) Method: BBT method helps prevent conception by avoiding unprotected vaginal intercourse during fertile days, but reliable effectiveness rates are not available (World Health Organization, 2018).

Sympto-thermal Method: This method prevents pregnancy by avoiding unprotected vaginal sex during fertile periods and is effective at preventing fewer than 100 pregnancies per 100 women per year with consistent and correct use (World Health Organization, 2018).

Emergency Contraception Pills: These pills prevent or delay ovulation and are effective, with effectiveness rates below 1 for ulipristal acetate ECPs, 1 for progestin-only ECPs, and 2 for combined estrogen and progestin ECPs (World Health Organization, 2018).

Calendar Method or Rhythm Method: Couples using this method avoid unprotected vaginal sex on the estimated fertile days and use abstaining or condoms. Reliable effectiveness rates are not available (World Health Organization, 2018).

Withdrawal (Coitus Interruptus): This method aims to keep sperm out of the woman's body, preventing fertilization, and is effective at preventing fewer than 40 pregnancies per 100 women per year with consistent and correct use (World Health Organization, 2018).

2.1.3.1 Nonreversible Family Planning Methods:

Male Sterilization (Vasectomy): Male sterilization method prevent sperm from entering ejaculated sperm. In terms of effectiveness, vasectomy has shown preventing 100 pregnancies per 100 women per year once well performed (World Health Organization, 2018).

Female Sterilization (Tubal Ligation): Once tubal ligation is done, female eggs are blocked from meeting sperm deposed in vagina during sexual intercourse. In terms of effectiveness, female sterilization has shown preventing 50 pregnancies per 100 women per year once well performed (World Health Organization, 2018).

2.2 Empirical Review

2.2.1 Family Planning uptake among women in child giving age

Globally, a study by Talnan revealed that 80% of women become sexually active by the age of 18, putting them at risk of unplanned pregnancies and sexually transmitted infections. The average age for the initiation of sexual activity was found to be 17.5 years (Leopold Ouedraogo et al., 2021). In Western countries like Italy, family planning and contraceptive methods are well understood and widely used, with a prevalence rate of 48%. This rate is lower than in countries such as Spain (58%) and Austria (62%). These rates are notably higher than those in developing countries. For instance, Bangladesh has focused on family planning since the 1970s, with relatively

high contraceptive use (31% for modern methods and 7% for traditional methods) among adolescent women (Guttermacher Institute, 2015).

African countries, particularly those emphasizing HIV/AIDS prevention, have relatively higher condom usage rates. Uganda, with significant public awareness and prevention efforts, has a 6% condom usage rate compared to 9% for other contraceptive methods combined. Several countries in Central Asia and sub-Saharan Africa have high rates of non-use of contraceptives, such as Kazakhstan with a 95% non-use rate. A study in Tanzania found that in 2017, 41.1% of women did not use any contraception during their last sexual intercourse. Among those, 21.9% used condoms, 16.6% practiced periodic abstinence, and 13.8% used the pill. Injectable contraceptives were the least used method (3.6%), followed by coitus interruptus (2.4%), and the female condom (0.5%) (Michael Johnson Mahande et al., 2020).

Research in East African Community (EAC) member states, including Uganda, Tanzania, and Kenya, has highlighted the link between knowledge of women of reproductive age and the use of family planning services. Low levels of knowledge were associated with lower rates of contraceptive use, with contraceptive rates in these countries ranging from 39.4% to 46.2% (Jay, Masoud, & Sabiha, 2021).

Rwanda stands out as a good performer in family planning, with a general contraceptive use rate of 58%. However, there is variation from one district to another, with some districts, like Gisagara, Rusizi, Ngororero, Rubavu, and Nyaruguru, having rates below 50% for the use of any modern family planning method. Other districts, including Musanze, Burera, Nyagatare, and Kirehe, are champions in family planning use, with rates above 50% (UNFPA, 2020).

2.2.2 Factors associated with Family Planning use among women in child giving age

Exercising an economic activity provides women with the financial means to buy modern contraceptives. Indeed, the fact that modern contraceptives are not free can be an obstacle to their use, especially by married women who do not exercise any activity. Moreover, Rwenge (2019) adds that the incompatibility between the role of mother and the status of worker leads women to the practice of modern contraception. On this issue, the author found that 21.3% of the woman who have no economic activity use modern contraceptive methods against 38.6% of the women who exercise an income generating activity using FP methods.

Regarding the sector of activity of the woman, studies have shown that it has an influence on her practice of modern contraception. Indeed, women working in agriculture are linked to lower use of FP methods than women working in industry or in the formal sector in general. Because the latter are more concerned with planning their fertility to better carry out their activity. Indeed, Congo (2015) showed that compared to women in the agricultural sector (With a rate of 30.4% of FP prevalence), craftswomen and traders are those who have the greatest chance of using modern methods of contraception with respective rates of 34.2% and 45.3% of FP prevalence. A similar result was obtained by Fassassi using data from the 2015 DHS in Zimbabwe (Zimbabwe National Statistics Agency, 2016).

Study conducted in Ghana for contraceptive practice obtained the result that married women from households with average living conditions are 2.57 times linked to the use of FP methods compared to poor women in union in addition, PSI-Haiti (2017) showed that women aged 15-49 of average socioeconomic status are twice linked to the use of FP methods as those of high socioeconomic status (Philomina Akadity Aviisah et al., 2018). Religion is fundamental in the lives of believers

and therefore religious beliefs influence their behavior in general and contraceptive behavior. Indeed, for most religions (catholic, protestant, Muslim etc.) the child is a gift from God and therefore any contraceptive practice is prohibited. This is notably the case of the Catholic Church which is formally opposed to the use of FP modern methods, the Muslim religion not being outdone.

Thus, findings from different DHS analyzed by Philip, showed that in the northern part of Cameroon, Muslim women are more likely to lower use of modern contraception than women of other religions. The family planning prevalence were found at 17.8% among Muslim women against 37.6% of other religions (Philip Nana Njotang et al., 2017). The same source has shown that the socio-demographic factors of women influence their modern contraceptive practice. These include age, number of desired children, number of living children and the practice of abortion (Philip Nana Njotang et al., 2017).

2.2.3 Barriers that facilitate women of reproductive age to use FP services

In Africa, the woman's husband is generally the head of the household, and his opinion is crucial in the practice of family planning by the woman. Indeed, Attanasso et al (2019), analyzing the factors of contraception in Benin, based on data from the EDS-2015, led to the result that the discussion of family planning with the spouse is an influential factor in the contraceptive practice. A woman who usually discusses family planning with her spouse is five times linked to the use of modern contraceptives than a woman who does not discuss it. This same result was obtained in Burkina Faso (Attanasso et al, 2019).

UNFPA (2020) studying the explanatory factors for the non-use of FP methods by women in Rwanda came to the result that discussing family planning with the spouse is a factor impacting on the use or non-use of FP methods by married women in Rwanda.

Motivating factors are those that create stimulation or desire for the practice of modern contraception in women. Their influence is therefore indisputable. These include subjective norms, beliefs, expected outcomes, checkpoint, severity, attitude, and willingness to pay. Subjective norms: these are the norms imposed on the woman by those around her (friends, parents, partners, etc.) in relation to the use of modern contraceptive methods. Attanasso et al (2019) showed that subjective norms significantly influenced the use of modern contraception by women of childbearing age, sexually active, non-pregnant (Attanasso et al, 2019).

3.0 Methodology

The study assessed the uptake rate and factors associated with family planning uptake among women of reproductive ages in 6 selected health centers of Rusizi district of Rwanda. A total of 382 women of reproductive age and 18 key informants were voluntary recruited to participate in this study. Quantitative data was collected using a pretested questionnaire while qualitative data were collected using guided interview. Statistical Package for Social Sciences was used for analysis of qualitative data while thematic approach was done to analysis qualitative data. Descriptive statistics were used to get proportion of respondents' socio-demographic characteristics. Multiple linear regression analysis was used for assessing factors associated with family planning uptake. The analysis was done for determining the uptake rate, to establish the factors associated and to investigate the barriers to family planning uptake among women of reproductive ages from 6 selected health centers of Rusizi.

4.0 Findings and Discussion

4.1 Demographic Data

The distribution of social-demographic characteristics of respondents who participated in this study are presented in table 1 and 2.

Table 1 Socio-characteristics of women of reproductive age (n=382)

Variables	Frequency	Percentage
Health centers		
Islamic		
Mont Cyangugu	45	11.9
Gihundwe	70	18.4
Nkombo	54	14.1
Nkungu	73	19.1
Nyakabuye	78	20.4
Age	61	16.0
<18	2	.5
18-30	139	36.4
31-40	171	44.8
>40	70	18.3
Number of children		
1	1	.3
2	100	26.2
3	147	38.5
4 and above	134	35.1
Education level		
Not educated	79	20.7
Primary	161	42.1
Three years of post-primary	38	9.9
Secondary	84	22.0
University	20	5.2
Occupation		
Job	165	43.2
No job	217	56.8
Socio-economic category		
Category 1	47	12.3
Category 2	98	25.7
Category 3	237	62.0
Religion		
Roman Catholic	181	47.4
Protestant	126	32.9
Seventh-day Adventist	30	7.8
Muslim	27	7.1
No religion	18	4.7
Health insurance		
CBHI	356	93.2
RSSB	25	6.5
Other	1	.3
Monthly income		
<50,000 Rwf	320	83.8
50,000-200,000	61	16.0
200,001-500,000	1	.3
Time distance to health center		
<25 min	71	18.6
26 min – 1 hour	256	67.0
1 hour – 3 hours	55	14.4
Husband approval on FP		
Yes	157	41.1
No	225	58.9

Table 2: Socio-Demographic Characteristics of Key informants (n=18)

Variables	Frequency	Percentage
Health centers		
Islamic	3	16.6
Mont Cyangugu	3	16.6
Gihundwe	3	16.6
Nkombo	3	16.6
Nkungu	3	16.6
Nyakabuye	3	16.6
Age		
20-30	1	5.5
31-40	14	77.9
41-50	2	11.1
>50	1	5.5
Sex		
Female	8	44.5
Male	10	55.5
Respondent category		
Head of HC	6	33.3
In charge of CHWs	6	33.3
In charge of FP services	6	33.3
Education level		
A2	4	22.3
A1	11	61.1
Bachelor's degree	2	11.1
Master's degree	1	5.5
Education field		
Nurse/ midwife	6	33.3
Public health	3	16.6
Social sciences	8	44.6
Others	1	5.5
Years of experience		
Below 5 years	2	11.1
Five to 10 years	9	50.0
More than 10 years	7	38.9
Religion		
Roman Catholic	3	16.6
Protestant	12	66.6
Seventh-day Adventist	2	11.1
Muslim	1	3.7

Source: Primary data (2022)

The study findings in Table 1 indicate that the majority of respondents (44.8%) were aged between 31 and 40 years, and 36.4% were aged 18 to 30. In terms of children, 38.5% had 3 children, and 35.1% had 4 or more. Regarding education, 42.1% had primary school, 22.0% had secondary education, and 20.7% had no formal education. A significant proportion (56.8%) were unemployed, and 62% fell into the 3rd category of Ubudehe. Most respondents (47.4%) identified as Catholic, while 32.9% were Protestant. In terms of health insurance, 93.2% used community-based health insurance, and 83.8% earned less than 50,000 RwF. The majority (67%) spent between 26 minutes to one hour traveling to health facilities, and 41.1% required their husband's approval for family planning.

Table 2 reveals that the majority of key informants (77.9%) were aged 31 to 40, with 55.5% being male. In terms of education, 61.1% had completed A1 level, and 44.6% were in social sciences.

Half of them had 5 to 10 years of experience, and 38.9% had more than 10 years of experience. Most respondents (66.6%) identified as Protestant in terms of religion.

4.2 Family planning uptake rate in 6 selected HCs of Rusizi district

These women of reproductive ages were asked to respond to ten questions about the FP uptake.

Table 3: Family planning uptake in 6 selected HCs of Rusizi district (August 2022)

Variables	Frequency	Percentage
Health centers		
Islamic	27	12
Mont Cyangugu	41	18
Gihundwe	32	14
Nkombo	43	19
Nkungu	46	21
Nyakabuye	35	16
Is currently using any FP method		
Yes	224	58.6
No	158	41.4
Type of FP method used		
Modern	103	27.0
Traditional	121	31.6
Not protected	158	41.4
Traditional FP method used		
Calculation (Urunigi)	57	14.9
Abstinence during certain time of the menstrual times	37	9.7
Breastfeeding	27	7.0
Not protected	261	68.4
Modern FP method used		
Injection	40	10.4
Pill	27	7.1
Condom	6	1.5
Implant	23	6.1
DIU	7	1.9
Not protected	279	73.0

Source: Primary data (2022)

In August 2022, findings from six selected health centers in Rusizi district regarding family planning among women of reproductive age showed that 58.6% were currently using FP. Of these, 32% used traditional methods, 27% used modern methods, and 41.4% did not use any FP. Among traditional method users, 14.9% relied on calculation, 9.7% on abstinence, and 7.0% on breastfeeding. Among modern method users, 10.4% used injectables, 7.1% used pills, 1.5% used condoms, 6.1% used implants, and 1.9% used IUDs.

The study's second objective was to identify factors associated with FP service uptake among postnatal care recipients in Rusizi district in August 2022, focusing on socio-demographic factors as shown in Table 4.

Table 4: Bivariate analysis of factors associated with FP uptake among the respondents

Particulars	FP uptake		Chi-square	P-value
	Yes (%)	No (%)		
Age			23.478	0.874
<18	0(0.0)	2(100.0)		
18-30	44(31.7)	95(68.3)		
31-40	56(32.7)	115(67.3)		
>40	3(4.3)	67(95.7)		
Number of children			86.239	0.121
1	0(0.0)	1(100.0)		
2	17(17.0)	83(83.0)		
3	78(53.1)	69(46.9)		
4 and above	8(6.0)	126(94.02)		
Education Level			**176.726**	**0.001**
Not educated	3(3.8)	76(96.2)		
Primary	18(11.2)	143(88.8)		
TVET	3(7.9)	35(92.1)		
Secondary	62(73.8)	22(26.2)		
University	17(85.0)	3(15.0)		
Occupation			11.407	0.501
Job	59(35.8)	106(64.2)		
No job	44(20.3)	173(79.7)		
Socio-economic category			15.380	0.893
Category 1	3(6.4)	44(93.6)		
Category 2	22(22.4)	76(77.6)		
Category 3	78(32.9)	159(67.1)		
Religion			78.894	0.079
Protestant	43(34.1)	83(65.9)		
Catholic	57(50.0)	57(50.0)		
ADEPR	3(4.5)	64(95.5)		
Adventist	0(0.0)	30(100.0)		
Muslim	0(0.0)	27(100.0)		
No religion	0(0.0)	18(100.0)		
Health insurance			18.935	0.053
Mutuelle	87(24.4)	269(75.6)		
RSSB	16(64.0)	9(36.0)		
Other	0(0.0)	1(100.0)		
Monthly income			**179.470**	**0.001**
<50,000 Rwf	44(13.8)	276(86.2)		
50,000-200,000	59(96.7)	2(3.3)		
200,001-500,000	0(0.0)	1(100.0)		
Time distance to health center			27.244	0.284
<25 min	21(29.6)	50(70.4)		
26 min – 1 hour	52(20.3)	204(79.7)		
1 hour – 3 hours	30(54.5)	25(45.5)		
Husband approval on FP			**164.106**	**0.001**
Yes	97(61.8)	60(38.2)		
No	6(2.7)	219(97.3)		

Source: (Primary data, 2022)

Table 4 shows that family planning uptake was statistically found associated with number of children in the family (3), education (in TVET), socio-economic category one (cat 1), and husband approval on FP.

Table 5: Multivariate analysis of factors associated with FP uptake among the respondents

Particulars	FP uptake		P-value
	AoR	95%CI	
Age			
<18	7.233	0.00-0.10	.389
18-30	.097	0.02-0.32	.118
31-40	.092	0.02-0.30	.022
>40	Ref.		
Number of children			
1	1.026	0.00-0.10	.543
2	.310	0.12-0.75	.009
3	1.56	0.02-0.123	.023
4 and above	Ref.		
Education Level			
Not educated	143.556	26.63-773.71	.088
Primary	45.019	12.00-168.80	.011
TVET	**66.111**	**12.05-365.60**	**.004**
Secondary	2.011	0.53-7.52	.006
University	Ref.		
Occupation			
Job	0.45	0.28-0.72	0.008
No job	Ref.		
Socio-economic category			
Category 1	**7.195**	**2.16-23.90**	**.004**
Category 2	1.695	0.98-2.92	.243
Category 3	Ref		
Religion			
Protestant	0.98	0.12-0.95	.270
Catholic	1.02	0.27-1.27	.312
ADEPR	0.21	2.18-88.24	.019
Adventist	0.22	3.27-124.33	.183
Muslim	019	2.30-95.83	.091
No religion	Ref.		
Health insurance			
Mutuelle	1.11	0.17-2.41	.288
RSSB	0.92	2.55-6.32	.089
Other	Ref.		
Monthly income			
<50,000 Rwf	1.60	3.41-18-24	.170
50,000-200,000	1.02	0.02-0.77	.210
200,001-500,000	Ref.		
Time distance to health center			
<25 min	2.857	1.37-5.96	.012
26 min – 1 hour	4.708	2.55-8.68	.007
1 hour – 3 hours	Ref.		
Husband approval on FP			
Yes	**17.01**	**0.07-0.41**	**.000**
No	Ref.		

Source: (Primary data, 2022)

The data presented in this table 5 using multivariable shows significantly higher odds of current family planning uptake among women of reproductive age. The following factors were statistically find associated with FP uptake among women of reproductive age: education level (TVET) (AoR=66.111, 95% CI: 12.05-365.60), Socio-economic category one (AoR=7.195, 95% CI: 2.16-23.90), and Husband approval on FP (AoR=17.01, 95% CI: 0.07-0.41).

4.3 Barriers preventing FP uptake in 6 selected HCs of Rusizi district

The third objective of the study was to investigate the barriers facilitating FP uptake among women of reproductive ages who obtained postnatal care services at 6 selected health centers of Rusizi district during the month of August 2022. For this, the researcher obtained information from 18 different key informants including heads of health centers, focal point of FP, and the person in charge of CHWs at health center.

The researcher conducted guided interview with key informants. The key informants were requested to talk about barriers which prevent women of reproductive ages to use FP methods (modern or traditions FP methods) in Rusizi District. The responses were stated verbatim below.

Theme 1: Education level and luck of information on FP methods

One respondent (Head of HC said *"…main barriers which contributed several times to the low uptake of FP rate not only in this HC but in the whole district health facilities are that women of reproductive age have rumors against these FP methods especially the modern ones. Since many times, the rumors said that modern FP methods causes sterility, decrease the libido, causes polymenorrhagia. ….most of not educated people have insufficient knowledge about the benefits of FP method use and when we approach them in sensitization, they don't adhere to the FP methods that we bring in these sensitization session"***KIHC 5**.

Among our responded included the CEHO. One coted **(KIHC 2)** said "*…among the problem that I have to fulfill my role and responsibilities of sensitizing the community in FP and other government priorities are insufficient field trips. Sometimes the motorcycles are off and I don't get chance to go the community in sensitization. Remember that sometimes supervision fees are insufficient and lately paid. These are barriers that I have experienced. These barriers contribute to the limited supervisions of CHWs CBP/FP program within HC catchment area."*

Theme 2: Socio-economic limitations

One staff in charge of family planning at HC responded *"…we received many clients who come for seeking FP methods at this HC. As someone who is in charge of FP services management, the issues that we have is that some FP methods like injectables, are not distributed for free as they were in 3 years ago. Women in these rural settings are with limited resources. You know that sometimes husband provide only fees for lunch and transport means for few women. It is very difficult to some women in procreation age to afford the costs of FP products once they are not reimbursed by CBHI."* **KIHC 6**

One of the heads of HC responded this "…*we agree that FP products are freely delivered to the HCs as it is done for other health programs inputs. You know that many district health facilities complained many years on the CBHI invoices which are rejected or whom the amount is deliberately reduced. These happen in FP services provision.*

We use many consumables like gloves, anesthesia, but some quantities are not considered by CBHI in charge of verification. They limit the number of gloves to be used while it is not feasible to use only one pair for example to accomplish the whole process of providing FP injectable like Implant. These debts from longtime contribute to the decrease of income generated by health centers and discourage staff because they are not motivated enough" ***KIHC 4.***

Discussion

The study, conducted in August 2022, revealed that among women receiving postnatal care at 6 selected health centers in Rusizi district, 58.6% were using family planning (FP). Of these, 27% used modern methods, 31.6% used traditional methods. Notably, 10.4% used injectables, 7.1% used pills, 1.5% used condoms, 6.1% used implants, and 1.9% used IUDs among modern method users. This data differs from findings in Western countries where FP uptake is generally lower, attributed to the socioeconomic context of Rwanda being a developing nation. However, the study's results were also lower than those in countries like Spain and Austria, which are more developed with higher education levels and income, contributing to greater FP use.

In contrary, the findings from this study are different from the one study conducted in Spain Spanish. The finding of this study shown that the rate of FP uptake was lower compared to the one prevailing in Spain Spanish (58%) and in Austria (62%). The higher rates of family planning (FP) usage observed in developed countries, in contrast to developing countries like Rwanda, can be attributed to factors such as higher education, greater economic prosperity, well-organized healthcare systems, and increased women's involvement in reproductive health decision-making. In Rusizi District, the study found that FP utilization among women of childbearing age is notably low compared to other regions and countries.

Regarding the factors influencing FP service uptake among women who received postnatal care in Rusizi District in August 2022, the study identified significant associations. Specifically, education level, monthly income, and husband's approval were found to have a statistically significant impact on FP uptake, with p-values below 0.05. These factors play a crucial role in determining the use of family planning services in this context. The study's findings contrast with those of Issa (2018), who emphasized the importance of a woman's age in modern contraceptive practices. Issa highlighted a generational effect, with younger women more inclined to adopt modern methods, while older generations tended to favor traditional methods influenced by pro-natalist societies. However, in the present study, age was not associated with family planning (FP) use.

On the other hand, the study aligns with Rwenge's (2019) research, particularly in terms of occupation and FP utilization. Rwenge emphasized that engaging in economic activities provides women with the means to afford modern contraceptives. This is especially crucial as modern contraceptives are not always free, making financial independence an important factor. In this context, the present study found a significant association between occupation and FP use ($p=0.05$), further supporting the idea that economic activity plays a role in FP utilization. Concerning the barriers preventing FP uptake among women of reproductive ages who obtained postnatal care services at 6 selected health centers of Rusizi district during the month of August 2022, the results of the present study showed that ignorance, insufficient information of FP methods, socio-economic situation of families were identified as serious barrier handicapping women from using FP methods.

These results are almost similar to the ones found by PSI-Benin (2018). The availability of modern contraceptive products is a factor likely to influence their use by women, since for them to be used, they should already be available and accessible. Indeed, PSI-Benin (2018), using data obtained during the study of the determinants linked to the use of FP among women in Benin, demonstrated that the availability of modern contraceptive products is a factor significantly influencing their use. Use by women in Benin. They also noted that women who easily find contraceptives when they need them are more numerous among users than among non-users.

Rusizi district where this study was conducted has a lot of number of HCs which are not offering FP modern methods including postpartum family planning (PPFP). Twelve out of 19 (63.1%) health centers of Rusizi District are managed by faith-based organizations. As a conclusion, low level of education, socio-economic limitations, and limitation in decision making to the women of reproductive age are contributing to the low FP uptake in rural settings of our country.

5.0 Conclusion

Findings from this study conducted to determine the uptake rate of family planning services among women of reproductive ages who obtained postnatal care services at 6 selected health centers of Rusizi district during the month of August 2022, show that 41.4% were found without using any family planning method. Family planning uptake was statistically found associated with education level (in TVET), socio-economic (cat 1), and husband approval on FP. The information form key informants revealed that insufficient information related to family planning services, financial limitations in the families, are barriers not facilitating women of reproductive age of Rusizi district to use FP services.

6.0 Recommendations

To the Ministry of Health: Integrate family planning (FP) services provision in all health posts, with special emphasis on FP secondary health posts located within faith-based health facility catchment areas.

To the Ministry of Local Government: Continue educating women and husbands from low-income categories about the importance of limiting childbearing and work to improve their socio-economic status.

To Hospital/District Level: Organize family planning outreach sessions in the catchment areas of all health centers, particularly in faith-based health facilities, to provide permanent FP methods.

To the Heads of Health Centers: Conduct family planning outreach sessions to decentralize services provision and reach a broader population.

Promote awareness and involvement of husbands in family planning services, aiming to facilitate their support and approval of FP uptake requests from their wives.

About the Authors

Umutesi Viviane holds a Master's degree in Public Health (Global Health Option) Mount Kenya University, Rwanda. He is currently serving as a medical-surgical business manager at Pyramid Pharma Ltd. His research interests include quality improvement, health service delivery and health-related policy making.

Dr Japheths Ogendi PhD) is a PhD holder; currently, he is serving as a senior lecturer at the School of Public Health, Mount Kigali University, Rwanda. Japheths does research in Allied Health Science, Civil Engineering and Safety Engineering. Their current project is 'Drug abuse among youths Shisha in particular.

REFERENCES

Attanasso et al. (2019). Factors of contraception in Benin at the turn of the century. In A. e. al, *Factors of contraception in Benin at the turn of the century*. Pubmed. doi:10.1016/s0010-7824(96)00279-x

Fassassi et al. (2019). Protocol for analyzing contraceptive practice based on demographic and health survey data. Harare.

Fassassi et atl. (2019). Protocol for analyzing contraceptive practice based on demographic and health survey data. Harare.

Fatemeh Najafi et al. (2013, December 2). Barriers of Modern Contraceptive Practices among Asian Women: A Mini Literature Review. *PubMed*, 1. Retrieved 12 21, 2022, from https://www.unfpa.org/press/nearly-half-all-pregnancies-are-unintended-global-crisis-says-new-unfpa-report

Judith R. Seltzer. (2002, January 1). The Origins and Evolution of Family Planning Programs in Developing Countries. 178. Retrieved January 21, 2023, from https://www.rand.org/content/dam/rand/pubs/monograph_reports/2007/MR1276.pdf

Leopold Ouedraogo et al. (2021, January 23). Towards achieving the family planning targets in the African region: a rapid review of task sharing policies. *BMC*, 32. Retrieved March 12, 2023, from https://reproductive-health-journal.biomedcentral.com/articles/10.1186/s12978-020-01038-y

Michael Johnson Mahande et al. (2020, October 15). Factors associated with modern contraceptives use among postpartum women in Bukombe district, Geita region, Tanzania. Dar Es Salaam: UDP. *PubMed Central*, 8. doi:10.1371/journal.pone.0239903

Mohamed Kassim et al. (2022, Marc 21). Factors affecting family planning literacy among women of childbearing age in the rural Lake zone, Tanzania. *BMC Public Health*, 2. doi:10.3390/ijerph18041651

New Zeland Family Planning. (2023, June 8). *OUR HISTORY We have been operating since 1936*. Retrieved from New Zeland Family Planning: https://www.familyplanning.org.nz/about/our-history#:~:text=Family%20Planning%20was%20set%20up,to%20die%20from%20illegal%20abortions.

NISR. (2021). *Rwanda Demographic and Health Survey 2019-20*. Kigali: Gouvernment of Rwanda. Retrieved 02 29, 2023, from https://dhsprogram.com/pubs/pdf/FR370/FR370.pdf

Paschal Awingura Apanga et al. (2015, 9 15). Factors influencing the uptake of family planning services in the Talensi District, Ghana. *PMC PubMed Central*, 3. doi:10.11604/pamj.2015.20.10.5301

Pendia Health. (2023, June 8). Retrieved from https://www.pandiahealth.com/resources/birth-control-throughout-history/

Philip Nana Njotang et al. (2017, January 3). Determinants of modern contraceptive practice in Yaoundé-Cameroon: a community based cross sectional study. *BMC*, 2-5. doi:DOI 10.1186/s13104-017-2543-7

Philomina Akadity Aviisah et al. (2018, August 20). Modern contraceptive use among women of reproductive age in Ghana: analysis of the 2003–2014 Ghana Demographic and Health Surveys. *BMC Women's Health*, 2. doi:10.1186/s12905-018-0634-9

PSI Haiti. (2017). Family Planning TRaC Survey Examining Use of Modern Contraceptive Methods Among Women of Reproductive Age 15-49 Years. Haiti: Research & Metrics.

Rusizi District. (2018). *2018-2024 District Development Strategy.*

Rusizi District. (2021). District health unity annual report 2021.

Tolefac et al. (2018). Trends and patterns of family planning methods used among women attending family planning clinic in a rural setting in sub - Sahara Africa : the case of Mbalmayo District Hospital , Camero. *Pub Med Public Health* .

UNFPA. (2014, 12 11). Population and Development in Africa. 18. Retrieved 2 12, 2023, from https://www.unfpa.org/sites/default/files/resource-pdf/POPULATI0N_AND_DEVELOPMENT_IN_AFRICA_OAU_ECA.pdf

UNFPA. (2020). The World at Six Billion. NY: UN Population Division.

UNFPA. (2020). World Population Prospects - The 2016-2017 Revision. NY: UNFPA.

UNFPA. (2022). *Nearly half of all pregnancies are unintended—a global crisis, says new UNFPA report.* UNFPA. Retrieved 11 21, 2023, from https://www.unfpa.org/press/nearly-half-all-pregnancies-are-unintended-global-crisis-says-new-unfpa-report#:~:text=Press%20Release-,Nearly%20half%20of%20all%20pregnancies%20are%20unintended%E2%80%94a%20global%20crisis,altering%20reproductive%20choice%E2%8

United Nations. (2022). World Family Planning 2022 Meeting the changing needs for family planning: Contraceptive use by age and method. In U. Nations, *World Family Planning 2022 Meeting the changing needs for family planning: Contraceptive use by age and method* (p. 9). New York, New York, US: UN. doi:UN DESA/POP/2022/TR/NO. 4

WHO. (2020, 12 8). World Health Organization. Family planning Contraception. 1. Retrieved 3 14, 2023, from https://contraceptionmedicine.biomedcentral.com/articles/10.1186/s40834-021-00165-6

World Health Organization. (2018, March 3). Family Planning: A Global Handbook for Providers. 1-309. doi:13: 978-0-9992037-0-5

World Health Organization. (2020, November 9). Family planning/contraception methods. *World Health Organization*, 2. Retrieved May 23, 2023, from https://www.who.int/news-room/fact-sheets/detail/family-planning-contraception

Zouhair , A., & Mahmoud , A. (2022). Introductory Chapter: Family Planning: Past, Present, and Future. In Middleberg, *Introductory Chapter: Family Planning: Past, Present, and Future* (p. 2). doi:ISBN 978-0-306-47449-1