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**Predictors of Low Uptake of Modern Contraceptive Methods among women living with
HIV in Nyarugenge District, Rwanda**

GITERA JOSEPH

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Epidemiology and Laboratory Management (FELTP) of the University of Rwanda**

Supervisor: Associate Professor Aline UMUBYEYI, MD, MSc, PhD.

Co-Supervisors: Dr. Vedaste NDAHINDWA, MD, MSc

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DEDICATION

To my mother and my entire family for their grateful help and support,

To all of you who have helped me in one way or another

To all my classmates who participated with me in this journey and shared their knowledge kindness, and selflessness to work and learn together in order to succeed in this meaningful endeavor.

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I recognize with much gratitude Director General of Muhima District Hospital, as well as Health care providers and patients for their participation in my study.

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ABSTRACT

Background: HIV infected women are at risk of unexpected pregnancy and sexually transmitted infections. In developing countries like Rwanda, provision of modern family planning methods and counseling to women in child bearing age including those on anti-retro therapy (ART) is an important strategy to prevent vertical transmission of HIV.

The main objectives were to determine the prevalence of contraceptive uptake and associated factors of low uptake of modern contraceptive methods among women living with HIV in Nyarugenge District, Rwanda.

Method: A cross-sectional study design was conducted and the qualitative approach with focus group discussion was conducted to support the quantitative method. Data were collected from 633 HIV-positive women in reproductive age using structured questionnaires and then the simple random sampling technique was used to obtain information from the respondents. Data were analyzed using STATA version 13.0. Bivariate and multivariate analysis were used to identify the factors associated with low use of contraceptive methods. The significance level was set at 5%.

Results: The prevalence of current contraceptive uptake was 80%.Injectable (47.24%) and Implants (25.43%) were found to be the most used contraceptive methods. Low contraceptive uptake was associated with the lack of health insurance with approximately 2 times higher odds [AOR= 2.49; 95% CI =1.46-4.24; p =0.01] compared to those who had health insurance; the long waiting time at health facilities [AOR= 0.26; 95% CI = 0.14-0.48; p =0.000]. Muslims followers were found about 2 times more likely to be non-users of modern contraceptive methods [AOR= 1.95; 95% CI = 1.15-3.32; p =0.013] than those who were Christians.

Conclusion: Low uptake of modern contraceptive use was found associated with lack of health insurance, long waiting time at health facility, and religion belief. The study suggests that, counseling focusing on the adherence on health insurance and the use of long-acting reversible contraceptive (LARC) , good customer care to increase the uptake of modern contraceptive among HIV positive.Socio demographic characteristics such as age, marital status, level of education were found to bet not associated with modern contraceptive use.

Keywords: Predictors, Modern contraceptive uptake, HIV positive Women, Nyarugenge, Rwanda.

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LIST OF ACRONYMES AND ABBREVIATIONS

CDC	: Center for Disease Control and Prevention
CHW	: Community Health Worker
DHS	: Demographic and Health Survey
FGD	: Focus Group Discussion
HAART	: Highly active antiretroviral therapy
HIV	: Human Immunodeficiency Virus
HMIS	: Health Management Information System
FP	: Family Planning
MCPR	: Modern Contraceptive Prevalence Rate
PLVIH	: People Living with Human Immunodeficiency Virus
RDHS	: Rwanda Demographic and Health Survey
UR	: University of Rwanda
WHO	: World Health Organization.

DEFINITION OF KEY TERMS

- Contraceptive Prevalence Rates** : Percentage rates of utilization of modern contraceptive methods in a given population.
- Contraceptive uptake** : Is defined as starting contraceptive use for any reason.
- Contraceptive non-use** : Women in bearing age who are not using any method of contraception.
- Failure Rate** : Percentage chance that the contraceptive would not work.
- Family Planning** : Reproductive choices made which include the what (contraceptive is used), the when to use it (spacing), the how to properly use it (sexual education) and all-encompassing choices made in order to control their fertility. Ideally it requires the consent of the male counterpart but in the end it is the woman who was biologically given the responsibility to reproduce or not.
- Limiting Family Size** : This term applies to all the women in this study who did not want more children according to their medical record and discontinued modern contraceptive methods for more than 1 year. It does not apply to women taking a “break” from FP services to space their children.
- Long Term Methods** : Contraceptive methods such as intrauterine devices DIU, implants and sterilization.
- Modern Contraceptives** : Modern contraceptive methods are used to prevent pregnancies. In this study they include intrauterine devices DIU, implants Jadelle, pills (Microgynon and Microlut), and Injectable (Depo).
- Predictors** : Circumstances, facts or influences that contribute to the discontinuation of modern contraceptive.
- Short Term Methods** : Contraceptive methods such as condoms, pills, injectables (in Rwanda) and spermicides and Nuvaring (elsewhere).
- Side Effects** : Health consequences that may or may not become present when hormone containing contraceptive methods is utilized.
- Unplanned pregnancies** : That are mistimed, unwanted at the time of conception

CHAPTER ONE: INTRODUCTION

1.1 Context and Problem Statement

Despite the potential contribution of family planning (FP) to the prevention of HIV infection and unintended pregnancies, contraceptive use in sub-Saharan Africa remains low (1). Globally, 33 million unplanned pregnancies are estimated to occur among women reportedly using a contraceptive method, either traditional or modern (2). Unintended pregnancy often leads to unplanned births. Some 37% of births in Rwanda each year are unplanned a proportion that varies slightly by province, from 34% in the West and the North to 37.40% in Kigali City, the South and the East (1). By using contraceptive, women can reduce the risk of mortality and morbidity associated with complication during childbirth

In 2015, a national health survey done by DHS reflected that the majority of users were given information about each of the three topics considered to be essential parts of informed choice: 70 percent were informed about potential side effects of their method, 68 percent were told what to do if they experienced side effects, and 87 percent were given information about other contraception options(1)

A previous study has also shown that other factors influencing women not to use contraceptives are their beliefs or husband's beliefs. From a study done in Rwanda in 2009, it was reported that 87% of women aged 15–49 approve of family planning, but only 64% believe that their partner approves of it. There was a high level of unmet need for family limitation; 58% of women who want to stop childbearing do not use modern contraceptives (2). The percentage of couples in which women partners is HIV positive was in Nyarugenge (5.6 percent)(1). The same DHS revealed that the total fertility rate in Nyarugenge was 2.7 % and the percentage of currently married women age 15-49, were using contraception in Nyarugenge District was 51 % for the modern contraceptive method.(1)

1.2 Problem Statement

The Rwanda demographic and health survey of 2014-15 revealed that overall, HIV prevalence in City of Kigali is 8.0 percent among women and 4.4 percent among men as compared to 3.6 percent and 2.2 percent among women and men respectively at the national level.

HIV prevalence is higher among women in Nyarugenge District (9.0 percent) and Kicukiro District (8.1 percent) and low in Gasabo district (7.4 percent). Among men, the prevalence is high in Nyarugenge district (6.0 percent), and low in Kicukiro (4.9 percent) and Gasabo District (4.4 percent) ;The percentage of couples in which both partners are HIV positive is high in Nyarugenge District and Gasabo District (5.5 percent and 5.2 percent, respectively) whereas it is low in Kicukiro (2.1 percent) (1)

Family Planning services are free in Rwanda and include methods such as injectables, pills, implants, Device Intra Uterine, female and male sterilization, and other non-hormonal methods that do not cause side effects. Access to services had not been seen as a problem since CHW's are present in each village to deliver services.

The percentage of couples in which women partners is HIV positive in Nyarugenge was 5.6% (3).

According to RDHS, the total fertility rate in Nyarugenge was 2.7% the same DHS revealed that percentage of currently married women age 15-49, were using contraception in Nyarugenge District was 51 % for the modern contraceptive method. The percentage of couples in which women partners is HIV positive was in Nyarugenge (5.6 percent)(3) According to DHS, the total fertility rate in Nyarugenge was 2.7 %. The same DHS revealed that the percentage of currently married women age 15-49, were using contraception in Nyarugenge District was 51 % for the modern contraceptive method.. In 2017 about 30% of HIV women did not be enrolled in FP methods (HMIS, 2017).

From that background, the question to ask why women with HIV do not initiate modern contraceptive methods?

Therefore, this study aims at determining the predictors of modern contraceptive use among women living with HIV in Nyarugenge District because it has many women who didn't be enrolled in family planning methods.

Many studies have examined determinants of contraceptive use in Sub-Saharan Africa; however, few have assessed determinants of such behavior among individuals with HIV/AIDS.

Uptake of contraception in this group might be affected by numerous issues.

1.3 Study Objectives

1.3.1 General Objective

The broad objective is to determine the predictors of modern contraceptive methods use among women living with HIV in Nyarugenge district, because this District has the highest number of couple with HIV positive.

1.3.2 Specific Objectives

The specific objectives of the study are to:

- Measure the uptake of modern contraceptive methods among HIV women in Nyarugenge District;
- Identify factors associated with low family planning use among HIV women in Nyarugenge District;
- Determine the practices of health care providers towards family planning provision in Nyarugenge District;
- Explore perceptions and constraints of women living with HIV on the use of Family planning methods

1.4 Research Questions

The questions to explore and research are:

- What is the prevalence of modern contraceptive methods uptake among HIV positive women in Nyarugenge District?
- Is non-use of modern contraceptives among HIV Positives associated with Socio demographic factors?
- What are the perceptions and constraints of women towards health care providers on modern contraceptive provision in Nyarugenge District?
- Why women with HIV positive do not uptake modern Contraceptive methods

CHAPTER TWO: LITERATURE REVIEW

Contraceptive use reduces the risk of unintended pregnancies among women living with HIV, resulting in fewer infected babies and orphans. In addition, male and female condoms provide dual protection against unintended pregnancies and against STIs including HIV.

Contraceptive use also reduces maternal mortality and improves women's health by preventing unwanted and high-risk pregnancies and reducing the need for unsafe abortions. Some contraceptives also improve women's health by reducing the likelihood of disease transmission and protecting against certain cancers and health problems.

According to world Health Organization, "It is estimated that 100,000 maternal deaths could be avoided each year if all women who said they want no more children were able to stop childbearing."(4)

The safety of the various contraceptives can be complicated to calculate as the use of some may incur serious side effects for some women with previous health history problems and therefore such women must be examined for health risks such as high blood pressure, diabetes, migraines, smoking, and those who are currently breastfeeding(5)

The side effects that are not serious and are the most common tend to be minimal and can include breast tenderness, headaches, nausea, changes in menstruation such as heavy or no bleeding or spotting, changes in libido, and mood swings. These side effects tend to subside after a few months, (Health, 2008). If deemed too hard to handle, women should be advised by their healthcare provider to simply switch to another method that is more convenient to them. It is argued though, that even if a variety of safe and effective treatments have been developed, it is the users use of treatments that has not been ideal leading health systems to the global challenge of creating the conditions that enable users the maximum satisfaction from available treatments (6)

In 2015, a national health survey done by DHS reflected that the majority of users were given information about each of the three topics considered to be essential parts of informed choice: 70 percent were informed about potential side effects of their method, 68 percent were told what to do if they experienced side effects, and 87 percent were given information about other contraception options. Although their numbers are relatively small, it is nevertheless of concern that women who have been sterilized appear to be least likely to be informed about side effects; only slightly more than half said they were told of other methods they could use.

The data show that public and private medical sources appear to be about equally likely to inform women about side effects and other methods (7)

In 2002, a qualitative study conducted in Kayonza District , Rwnada identified major barriers and opportunities for delivering family planning information and services in the country. The assessment indicated a lack of quality and access to services, social cultural religious issues influences, and the genocide as an important factor affecting fertility behavior in Rwanda (2)

Research has also shown that other factors influencing women not to use contraceptives are their beliefs or husband's beliefs. From a study done in Rwanda in 2009, it was reported that 87% of women aged 15–49 approve of family planning, but only 64% believe that their partner approves of it. There was a high level of unmet need for family limitation; 58% of women who want to stop childbearing do not use modern contraceptives (8)

Interviews conducted at clinics in Rwanda by Wadhams, also reported that a midst sensitization and awareness-raising, women's biggest barrier to using contraception was their husbands since many men still value more a large family(9).

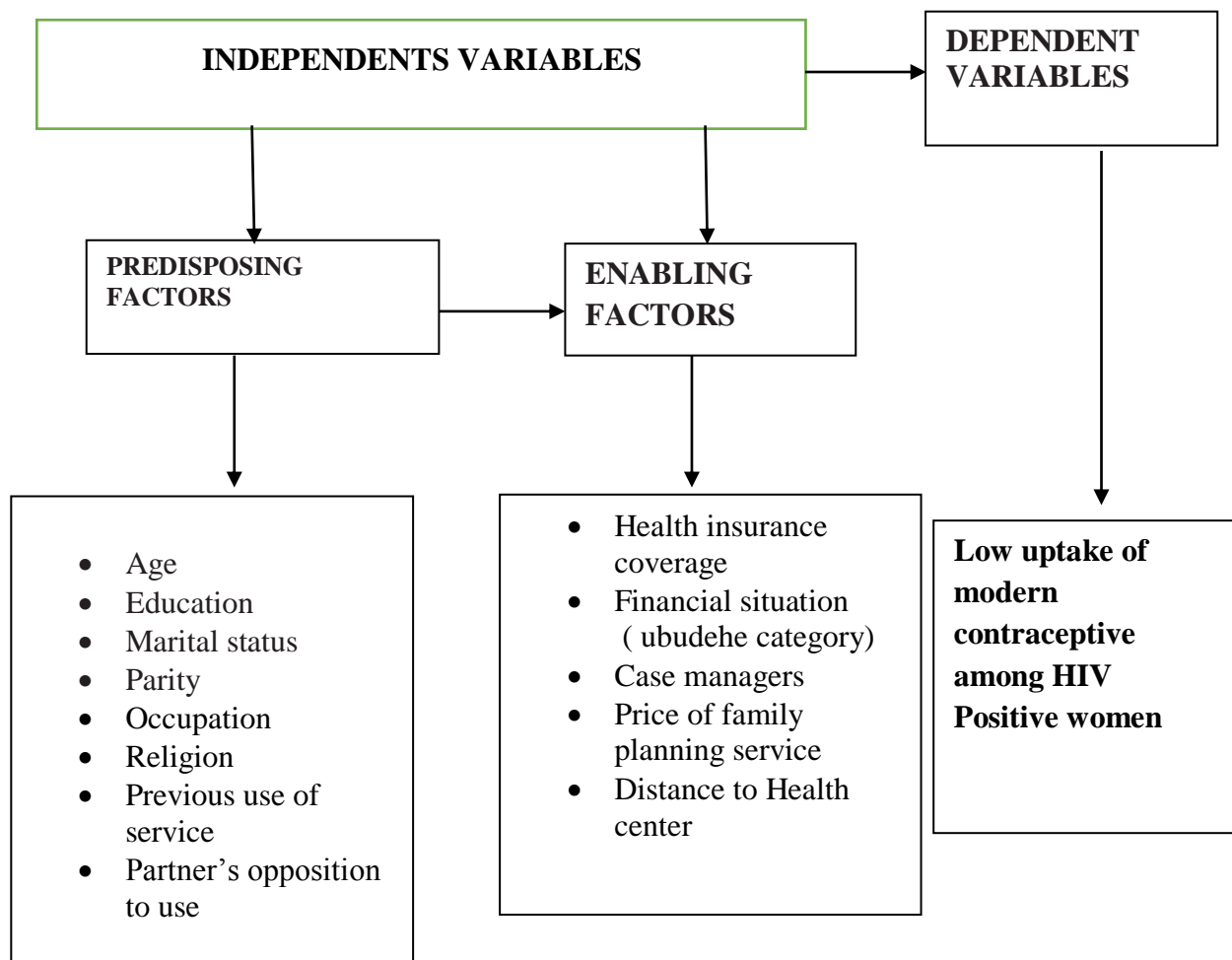
In Ethiopia, the contrary exists where men support their women on contraceptive usage. A study found that contraceptive use was high among married women who frequently discussed with their husbands about modern contraceptives at about seven times more than women who did not discuss at all. This study also indicated that those women whose husband's approve using modern contraceptives were almost three times more likely to use modern contraceptives (10)

Since the WHO identifies knowledge as being key to making well informed decisions in family planning, the variable of knowledge was studied to measure how knowledgeable the women were in terms of the methods available and where to acquire them (11).

Further, the quality of care or service as a factor that can determine whether a client returns was also studied. As the availability of choice of methods had been established, the information given to clients and other interpersonal relations and actions to ensure continuity of care was therefore determined (12).

From this literature review, the conceptual framework adapted by look at socio demographics variables such as age, level of education, religion, and marital status which can be intervening variables contributing to the use of modern contraceptives as seen in some studies previously discussed.

Figure 1: Conceptual Framework



This Framework is adapted from behavioral Andersen model (Ronald M. Andersen, 1995)

The Andersen Behavioral Model of the utilization of services shows strength in its predictive ability to describe health care utilization selection of independent variables was based on the literature review. The model provides a dynamic understanding of the relationship between each main component. Additionally, this model reinforces the interactions among each socio-ecological level, describing how structural determinants directly influence population attendance to the health facility to seek services. In specifying the factors associated with family planning uptake among HIV positive women, we examined the factors of some selected background characteristics, which are grouped as (i) predisposing; and (ii) enabling factors. Enabling factors are related to individuals’ personal and health care service such as Health insurance coverage Financial situation (Ubudehe category), price of family planning service, Distance to Health center, The dependent variable is the modern contraceptive non-use among HIV positive women.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Research Design

This study was a cross-sectional analytical design. In addition, a qualitative approach was used to explore the quality, barriers and enabling factors to family planning uptake using focus group discussion among HIV women in Nyarugenge district.

3.2 Study Setting

This study was conducted in Nyarugenge District through Muhima District Hospital's catchment area, which provides clinical care for HIV-Positive individuals.

3.3 Target Population

The targeted population was HIV positive women enrolled in HIV/AIDS care at a retroviral clinic in Health Centers and Muhima Hospital. Eligible participants were adult HIV women between the age of 18 and 49 attending Nyarugenge Health Facilities.

Inclusion criteria

- Being a woman with HIV positive and aged 18 to 49 years' old
- Woman HIV Positive without mental health disorders
- Willingly to participate in the study

Exclusion criteria

- The woman who does not fit in the established aged interval
- The woman who refuses to consent
- Being aged bellow 18 years' old because women of under 18 years are considered as children and the human reproductive law does not allow them to consent or request for family planning methods without their parent or caregivers consent
- Women with mental disorders

3.3 Sample Design

3.3.1 Sample Size

The Sample size for the respondents was determined from HIV positive women of reproductive age (15–49 years) attending ART clinics.

3.3.2 Sampling Technique

3.3.2.1 Sample size determination

In this study, a simple random sampling technique was used. To obtain a good sample size and ensure that there is no bias in the data collection, the researcher will use the following

$$\text{formula: } n = \frac{n_0}{1 + \frac{n_0}{N}} \text{ Where, } N_0 = \frac{t^2 * p * (1 - p)}{d^2}$$

Where: n_0 is the sample size, t is the value for the selected alpha level, e.g. 1.96 for (0.25 in each tail) a 95 percent confidence level. P is the estimated proportion of an attribute that is present in the population. q is $1-p$. $(p)(q)$ are the estimate of variance. d is the acceptable margin of error for proportion being an estimate. Therefore, based on the above formula, the researcher decides to use 95% as the confidence level of which Cochran says is more reliable (Cochran, W. G., 1977)

Because we don't know exactly the prevalence of HIV positive women in Nyarugenge in 2019, we decided to use the prevalence of 50%.

Thus, $p=0.5$, $d= 0.05$, $t=1.96$ (in each tail).

$$N_0 = \frac{(1.96)^2 * (0.5) (1 - 0.5)}{(0.5)^2}, N_0 = 384$$

The sample size was 384 respondents,

To compensate for no response rate we considered 10% of the sample be added on the minimum sample size which gives 38 participants; finally, a total of 422 (384+38) participants were sampled for the study.

After getting the minimum sample size we used also the design effect (the value of 1.5 were used) to meet the inferential goals of the study and we got $1.5*422= 633$

The total number of participants is 633.

4. Data Collection and Data Analysis Process

The study was conducted in 7 health facility providing family planning methods conveniently selected among eleven health facilities; those are Biryogo HC, Butamwa HC, Gitega Hc, Kabusunzu HC, Muhima HC, Muhima Hospital and Rugarama HC. After being cleared to access the records of health facilities, the sample size in each health center was calculated based on the proportionate allocation sampling technique from 633 respondents $N_i = n \cdot N_j / N$. Where n =sample size of the entire target population, N_j =number of the population of each health center and N =total number of the target population, n_i = sample size of every health center. Participants were conveniently interviewed

Table 1: The Number of Proportional Sample size by Health Center

S/N	Health Facility	Total Population	Proportional sample size
1.	MUHIMA DH	924	$n_1 = 924 * 633 / 5223 = 112$
2.	MUHIMA HC	659	$n_2 = 659 * 633 / 5223 = 80$
3.	BIRYOGO HF	820	$n_3 = 820 * 633 / 5223 = 99$
4.	KABUSUNZU HC	1013	$n_4 = 1013 * 633 / 5223 = 123$
5.	RUGARAMA HC	623	$n_5 = 623 * 633 / 5223 = 75$
6.	BUTAMWA HC	220	$n_6 = 220 * 633 / 5223 = 27$
7.	GITEGA (RWAMAMPARA) HC	964	$n_7 = 964 * 633 / 5223 = 117$
	TOTAL	5223	633

The quality of the data collection process was checked on a daily basis by nursing supervisors, and the principal investigator. The SPSS 16.0 was used for data entry then data were exported to excel and the STATA 13.0 version along with descriptive statistics were used. Multivariate logistic regression analysis was used to identify predictors of modern

contraceptive use at (P-value <0.05), and odds ratios with 95% confidence interval were used to assess the strength of associations between variables.

For the qualitative approach of the study, 4 focus group were conducted in total to get more information on the barriers of family planning uptake among HIV positive women. Participants were purposively selected from selected health Center focus group discussions (FGDs) were conducted among women HIV ever used one of the FP methods and users to explore perceptions of HIV positive women on the use of modern contraceptive methods. The other category was women with HIV positive with 0-1 and 2 children and above. Each FGD was composed of 8–12 people as per the qualitative study recommendations and aims to capture the views and insights of the participants on family planning discontinuation. FGD questions addressed women's attitudes toward fertility and contraception use.

The translated text was analyzed by use of qualitative content analysis (CA). Qualitative CA focuses on the subject and the context, highlighting the differences and similarities within codes and categories. Recorded data were transcribed and translated from Kinyarwanda to English. Transcripts were first read through several times while making notes on them. The concepts were then categorized into themes and a report was produced for each discussion topic. Descriptive quotes representing key themes were identified and included.

Discussions were transcribed verbatim and coded. Codes were identified based on data collected during the interviews and were grouped under major themes, which provided the framework for analyzing responses among selected respondents.

5. Ethical considerations

Ethical clearance was obtained from the College of Medicine and Health Sciences by Internal Review Board Consent and collaboration were requested before data collection. Face-to-face interviews to fill the questionnaires were conducted. The informed written consent of the participants was obtained after explaining the purpose, benefits, risk, and nature of the study and knowing their willingness to participate in the study. They have been assured about their confidentiality and anonymity. They were also told that their participation was voluntary and not compulsory. Individual information was kept confidential, the names were not written on the questionnaires and only used the number to identify participants, and hard copies of information were kept locked in the cupboard.

CHAPTER FOUR: RESULTS

4. 1.QUANTITATIVE RESULTS

4.1.1: Socio-demographic characteristics of respondents

Of the total of 633 women who participated in the study, 410(64 %) were aged 25-34 years, 617 (97%) were living in the urban area, 74% were married.

The study participant was predominately Christian (81%) (Table 2).

Table 2: Socio-demographic characteristics of respondents

Characteristics	Frequency (n)	Percent (%)
Age group		
18-24	47	7.42
25-30	260	41.07
31-37	150	23.70
38 and above	176	27.80
Residence		
Rural	16	2.5
Urban	617	97.4
Marital status		
Married/Co-habituating	470	74.2
Divorced or separated	86	13.6
Single	77	12.2
Education level		
None	56	8.8
Primary	470	74.2
Secondary or post-secondary	107	17
Religion		
Christian	515	81.3
Jehovah's Witness	24	4
Muslim	86	13.5
None	8	1.2
Occupation		
Civil Servant	26	4.1

Farmer	88	13.9
Household Keeper	15	2.4
Private Employed	121	19.1
Self-employed	232	36.7
Unemployed	151	23.9
Number of Children		
One	160	25.3
Two or more	473	74.7
Financial status (Ubudehe category)		
Category 1	46	7.2
Category 2	279	44.1
Category 3	307	48.5
Category 4	1	0.2
Covered by Health insurance		
Yes	544	86
No	89	14

2. Prevalence of contraceptive use among HIV positive women

The respondents, about 80% were using Modern contraceptive methods of family planning among HIV positive woman of bearing age. While 20% were not using modern contraceptive methods.

Table 3: Prevalence of contraceptive use among HIV positive women

Modern Contraceptives use		
	Frequency	Percent (%)
No	129	20.38%
Yes	504	79.62%

When asked “which FP method have you used?” the most prevalent answer was injectable (47.2%), followed by implants (25.4 %) and oral pills contraceptive (11.53%). Intrauterine devices (IUDs) were less used in Nyarugenge District (3%)

Table 4: Percentage of Contraceptive uptake by Modern Contraceptives

Modern Contraceptives	Frequency	Percent (%)
Condom	75	11.85%
Implant	161	25.43%
Injection	299	47.24%
IUD	20	3.16%
Pills	73	11.53%
Tubal ligation	3	0.47%

On the responses for perceived quality of services shows that a high percentage of respondent's 66.6%, disagree/strongly disagree with being informed of possible side effects followed by 52.8% strongly disagreeing that they were not reached after stopping methods.

In other areas of quality of service, it was found that on the contrary, it seemed that clients were very satisfied or strongly agreed that health providers offer privacy at 98.4%, they are treated with respect at 95.9%, were given good/excellent physical care at 95.9%, 95.1% agreed/strongly agreed that methods/materials were available, 78.9% agree/strongly agree that they had all their questions answered, and finally were given good/excellent advice at 78.8%.

Concerning frequently waiting for services, about 70% said they strongly disagree/agree they waited for services a long time which gives room for improvement in this area (Table 5)

Table 5: Perceived quality of care

Perceived quality of service	SD (%)	D (%)	NDA (%)	A (%)	SA (%)
I was informed of possible side effects	65.0	1.6	3.3	15.4	14.
My community health worker attempted to reach me after I stopped using FP services	52.8	0	3.3	7.3	36.6
My health providers gave me good physical care	2.4	0	1.6	5.7	90.2
My health providers gave me good advice	20.3	0	.8	8.9	69.9
I frequently waited a long time when I came for services	4.1	8	69.9	8.1	17.1
Contraceptive methods and other materials where available	0	1.6	3.3	11.4	83.7
My health providers treated me with respect	0	0	0	4.1	95.9
My health providers answered all my questions	18.7	0	2.4	29.3	49.6
My health providers kept my privacy	0	0	0	1.6	98.4

SD- Strongly Disagree, D- Disagree, NDA- Neither Disagree or Agree, A- Agree, SA- Strongly Agree

3. Factors associated with family planning use among HIV women in Nyarugenge District

According to the table 6 below, within 7 variables analyzed, 6 of them demonstrated their association with not use modern contraceptive method ($P < 0.005$) such as religion, age, education, waiting time and being experienced HIV positive .

Table 6: Relationship between socio-demographic factors and non-uptake of Modern Contraceptive among women living with HIV in Nyarugenge District

Variables	Use of modern contraceptive methods				OR (CI)	p. value
	Yes		no			
	n	%	n	%		
Marital status						
Married	383	81.49	81.49	18.51	1	
Divorced	65	75.58	21	24.42	1.42(0.82- 2.45)	0.205
Single	56	72.73	21	27.27	1.65(0.94- 2.86)	0.076
Religion						
Christian	420	81.55	95	18.45	1	
Jehovah's Witness	22	91.67	2	8.33	0.40(0.09-1.73)	0.223
Muslim	57	66.28	29	33.72	2.24(1.36-3.70)	0.001
None	5	62.50	3	37.50	2.65(0.62-11.29)	0.187
Age group						
31-37	120	80.00	30	20.00	1	
18-24	32	68.09	15	31.91	1.87(0.90-3.89)	0.092
25-30	208	80.00	52	20.00	1	1.000
38 and above	144	81.82	32	18.18	0.88(0.51-1.54)	0.677
Education level						
Secondary	87	81.31	20	18.69	1	
None	37	66.07	19	33.93	2.23(1.06-4.66)	0.032
Primary	380	80.85	90	19.15	1.03(0.60-1.76)	0.913
Residence						
Urban	492	79.74	125	20.26	1	
Rural	12	75.00	4	25.00	1.31(0.41-4.13)	0.643
Waiting time to the health facility						
More than 1:30	49	62.03	30	37.97	1	
Between 1 and 1:30	197	85.65	33	14.35	0.27(0.15-.49)	0.000
Between 30 and 1	210	80.46	51	19.54	0.39(0.22-.68)	0.001
Less than 30	48	76.19	15	23.81	0.51(0.24-1.06)	0.074
Health insurance						
Yes	443	81.43	101	18.57	1	
No	61	68.54	28	31.46	2.01(1.22-3.30)	0.006
Experiencing side effects in the past						
No	444	79.00	118	21.00	1	
Yes	60	84.51	11	15.49	0.68(0.35-1.35)	0.280
Years of being tested for HIV						
1-5 years	309	81.53	70	18.47	1	
6-10 years	155	79.08	41	20.92	1.16(0.75-1.79)	0.481
11-20 years	40	68.97	18	31.03	1.98 (1.07-3.66)	0.028

4. Factors associated with non-uptake of modern contraceptive methods

Using the logistic regression model, respondents without health insurance were about 2 times more likely not to use modern contraceptive methods [AOR= 2.49; 95%CI =1.46-4.24; p =0.01] compared to those who had health insurance. Muslims followers were about 2 times more likely to be non-users of modern contraceptive methods [AOR= 1.95; 95%CI = 1.15-3.32; p =0.013] than those who were Christians.

The long waiting time to health facilities when receiving care contribute to non-use modern contraceptive methods [AOR= 0.26; 95%CI = 0.14-0.48p =0.000].According to the table 7 below, within 7 variables analyzed, 3 of them demonstrated their association with not use modern contraceptive method (P<**0.005**) such as religion, lack of health insurance, waiting time at health facility (table 7).

Table 7: Multivariate analysis of variable significantly associated with non-uptake of modern contraceptive methods

Variables	AOR	CI	P-Value
Religion			
Christian	1		
Jehovah witnesses	0.32	0.72-1.46	0.144
Muslim	1.95	1.15-3.32	0.013
None	1.72	0.38-7.83	0.478
Age			
35 and above	1		
15 -24	1.84	0.85-4.01	0.121
25 - 34	1.30	0.80-2.10	0.282
Health insurance			
Yes	1		
No	2.49	1.46-4.24	0.001
The waiting Time to health Facility			
More than 1:30	1		
Between 1 and 1:30	0.26	0.14-0.48	0.000
Between 30 and 1	0.31	0.174-0.56	0.000
Less than 30	0.41	0.18-0.89	0.025
Minutes			
Level of education			
Secondary and above	1		
Primary	0.94	0.52-1.67	0.833
None	1.67	0.76-3.66	0.202

AOR =Adjusted Odds Ratio; CI=Confidence interval

4.2 RESULTS FROM FOCUS GROUP DISCUSSION

The Data from qualitative component of the study are support those presented above from quantitative section. In general, factors associated with non-uptake of family planning reported during focus group discussion are: fear of side effects, consumption of a lot drug and ignorance of advantage of family planning use.

The quotations indicate the views of selected participants on barriers and enabling factors on the available modern contraceptive methods use in Nyarugenge district: Many participants passionately described barriers on the available modern contraceptive methods use in Nyarugenge district

4.2.1 Uptake of modern contraceptive methods among HIV women

Almost all the discussants explained that most HIV positive women uptake modern contraceptive methods. Respondent 2 of FGD 1 said that: *"You can't continue to give birth while you are saying that you are HIV positive. What I know is that giving birth reduces blood from the body, hence immunity reduces as well. On my view, it is better to stop rather than continuing giving birth anyhow. On my side, I am using injection of 3 months as contraceptive methods. It is not only the problem of giving birth, but giving birth while we are HIV positive it's not good"*.

Discussants explained the importance of the uptaking modern contraceptive methods. Respondent 5 of FGD 3 said that: *"On my stand, family planning is good because it helps us to plan for our children, so our children are educated and hence get access to welfare. In additional when we have problems, we go to see a health care providers because, they sensitize us to control births, so that we may have healthy children. When you need to have more children, you seek advice from health care providers who make a follow up and helps to decide on which contraceptive method you should even our government supports birth control"*.

4.2.2 Factors associated with family planning use among HIV women

Most discussants reported that there are factors associated with the uptake of modern contraceptive methods. Respondent 6 of FGD 2 said that: *"Using modern contraceptive methods it's good because they are easy to use. Therefore, you don't continue to give birth because by giving birth you can also have a contaminated child. In fact, when you use modern method which is effective, you can't conceive. So, even that child who would be born*

contaminated is not born.” The respondent went further to say: *“We use modern methods because they are the ones which are effective, also advised by health providers. We are also pleased by these modern methods because when you aren’t comfortable with one method you can choose another one. When you are not comfortable with all methods you are advised to condoms”*.

4.2.3 Barriers and enabling factors on the available modern contraceptive methods use

Most of the discussants explained that side effects are among the barriers that limit HIV positive women to use modern contraceptive methods use. The respondent 7 of FGD 3 participants said that:

“There are some people for whom these methods cause side effects and it becomes worse for the case of people who are using these methods, taking at the same time anti-retroviral drugs; there are also some HIV positive persons who refuse to use modern contraceptive methods because of religion beliefs”.

Almost all participants reported that mindset and ignorance are the barriers to use modern contraceptive methods among HIV positive women. The respondent 4 from FGD 2 participants expressed that

“My view also is that, some HIV positive persons refuse to use modern contraceptive methods because of poor mindset, ignorance, relying on rumors rather approaching health care providers to get more explanations”. This was also complemented by the respondent 7 of FGD 3 who said that: *There is another group of HIV positive persons who refuse to use modern contraceptive methods pretending that these methods can be origin of other infections”*. She went further to say that: *“Other HIV positive refuse to use modern contraceptive methods simply they say they take a lot anti-retroviral tablets so, adding more drugs to these may kill them.”*

Discussants also reported the lack of husband support. The respondent 3 from FGD1 said that:

“Another reason for not using contraceptive method by HIV positive persons is that some women say that their husbands don’t support them, pretending that ,when a wife is using these methods, she does satisfy her husband as usual because she develops vaginal dryness”.

Most respondents agreed on predisposing factors associated with the uptake of modern contraceptive methods as reported by the respondent 1 of FGD 4 said that:

“People who are HIV positive prefer to use modern long term methods for 3 or 5 years they are easy to use and you are given an appointment after 3 or 5 years and during this whole period you are secured and you are sure that you can’t conceive; If it’s for 3 months you are sure that you are secured during these 3 months. For sure, these methods are very good because they don’t require any other calculations”. She went further to say that: *“Another advantage of these modern methods for HIV positive persons is that when you are using one of these methods, there is a health care provider who makes a close follow up and control to check if this method is eligible for you, whereas when this person uses a traditional method she is to the one to take for herself because there is no health care provider for traditional methods”*.

5. DISCUSSION

The prevention of unplanned pregnancies among HIV infected women depend on the use of modern contraceptives. This study hence sought to determine the predictors of low modern contraceptive methods use among women living with HIV in Nyarugenge district. Data were discussed according to the study objectives.

In line with the study conducted in 2018 among HIV infected women attending HIV care centres in Togo which showed that the proportion of women who were not using a contraceptive method was 74.7% (13), this current study revealed that the overall prevalence of contraceptive use among women living with HIV in Nyarugenge District was 80%. This is also in line with the study conducted in 2016 among HIV-infected women and men receiving antiretroviral therapy in Lusaka, Zambia which indicated the use of modern contraception by 69% of female HIV patients(14) .This is contrary to the study conducted in the infectious disease clinic at Gulu Regional Referral Hospital, Northern Uganda in 2018 which showed 36% as the prevalence of contraceptive use among HIV-Infected women of reproductive age(15) . The findings of the current study also differ from the study conducted in Kenya, Namibia, and Tanzania which indicated higher contraceptive prevalence of 91 % among sexually active HIV-positive women compared to the findings of this study (16). While the locations of these different surveys varied (e.g., postpartum clinics, ART clinics), these comparisons highlight the wide variation of contraceptive uptake among people living with HIV in sub-Saharan Africa. The possible explanation for the difference in utilization of

modern contraceptives in these areas might be the difference in the study period and eligibility criteria.

As revealed in this study, the non-use of modern contraceptive methods was about 2 times higher among respondents without health insurance compared to those who had health insurance [AOR= 2.14; 95%CI = 1.24-3.70; p =0.006] Studies show that health insurance decreases financial barriers and increases access to health care generally, as in the Philippines, Rwanda, and Ghana.

This is in line with the results of the review of household survey data from seven FP2020 countries whereby the results from Ethiopia, Kenya, and Philippines indicated that the insurance coverage was associated with greater use of modern contraceptives(17).Contrary to that, in Ghana and Indonesia, mCPR was higher among uninsured women, though the difference between groups was not statistically significant in Ghana(17). The case of Rwanda shows how insurance complements other essential factors critical to ensuring high coverage and quality of family planning factors like a strong commodity logistics system, family planning education, provider training, and regular quality monitoring (18).

Muslim followers were about 2 times more likely to be non-users of modern contraceptive methods [AOR=1.95; 95%CI = 1.15-3.32; p =0.013] than those who were Christians.

In line with the study conducted on family planning and contraception in islamic countries which revealed a low use of family planning among Muslims (19), respondents with muslim religion were about 2 times more likely to be non-users of modern contraceptive methods [AOR=1.95; 95%CI = 1.15-3.32; p =0.013] than those who were christians. This is also similar with the findings of the study conducted in Nigeria in 2015 which showed lowest contraceptive use among the muslim women (5.6%, p<0.001) and highest for women of other christian (26.4%)(20) . In the study conducted in Ghana, Muslim (P= 0.004) were more than 30 times as likely as the non-religion category to use contraceptive method (21).

The findings from this study are also in line with that of the study done in South Ethiopia entitled modern contraceptive utilization and associated factors among HIV positive women on antiretroviral therapy in Mizan-Tepi Teaching and Referral Hospital, South-West Ethiopia which found that women whose age \geq 35 years old (AOR=0.30; 95% CI: 0.09, 0.96), Muslims (AOR=0.34; 95% CI: 0.17, 0.67), widowed/separated (AOR=0.21; 95% CI: 0.10, 0.45), monthly income \geq 1500 birr (AOR=0.29;95% CI 0.13, 0.69) and not having discussion

with partner (AOR=0.18; 95% CI 0.07,0.47) were less likely to use modern contraceptives. Whereas, women whose partner educational status secondary and above (AOR=2.78; 95% CI 1.22, 6.36) were more likely to use modern contraceptives (14).

The long waiting time to health facilities (Between 1 and 1:30) when receiving care contribute to non-use modern contraceptive methods [AOR= 0.26; 95%CI = 0.14-0.48p =0.000]. In line with other studies, waiting time has been reported as a very important contributing factor to client use of healthcare services. As highlighted in the study to assess the women satisfaction with family planning services in Mozambique, the odds of reporting dissatisfaction were 20 times higher among women who waited more than 4 hours to receive care, as compared with clients who had to wait <2 hours(22).

Innovative approaches to reducing the length of waiting times are desirable and are recommended for this setting.

Positive provider attitude is a key element in enhancing contraceptive use among HIV positive women. Our study indicates that lack of Client's follow up, insufficient advice on family contraceptive use and lack response to all queries asked contribute to the low uptake of contraceptive.

A study in Nigeria , was very similar to this study in that it revealed that Less than 17.65% of the FP providers did not discussed different health care issues with clients, while 29.41% poorly did (inadequate) (23).

The case of Rwanda shows how insurance complements other essential factors critical to ensuring high coverage and quality of family planning factors like a strong commodity logistics system, family planning education, provider training, and regular quality monitoring (18).

Muslim followers were about 2 times more likely to be non-users of modern contraceptive methods [AOR=1.95; 95%CI = 1.15-3.32; p =0.013] than those who were Christians.

The study conducted on Family Planning and Contraception in Islamic Countries revealed a low use of family planning and find that religious extremist played a strong role in the misinterpretation of Islam about FP(19)

The findings from this study is in line with that of the study done in South Ethiopia entitled Modern Contraceptive Utilization and Associated Factors among HIV Positive Women on Antiretroviral Therapy in Mizan-Tepi Teaching and Referral Hospital, South-West Ethiopia found that women whose age ≥ 35 years old (AOR=0.30; 95% CI: 0.09, 0.96), Muslims (AOR=0.34; 95% CI: 0.17, 0.67), widowed/separated (AOR=0.21; 95% CI: 0.10, 0.45), monthly income ≥ 1500 birr (AOR=0.29;95% CI 0.13, 0.69) and not having discussion with partner (AOR=0.18; 95% CI 0.07,0.47) were less likely to use modern contraceptives. Whereas, women whose partner educational status secondary and above (AOR=2.78; 95% CI 1.22, 6.36) were more likely to use modern contraceptives (14).

6. STUDY LIMITATIONS

The researcher acknowledge that this study has some limitations, like any other cross-sectional study, it is difficult to precise the direction of the association between exposure and outcome .Another limitation is that the study did not assess the perceptions of health care providers on family planning use among the HIV positive

CHAPTER FIVE: CONCLUSIONS & RECOMMENDATIONS

5.1 CONCLUSION

The study aimed to determine the prevalence, predictors of modern contraceptive methods use among women living with HIV and to explore the HIV positive women's perception on the use of modern contraceptives and to estimate the perceived quality of health care providers towards modern contraceptive provision in Nyarugenge District , Rwanda

The study findings revealed that the utilization rate of the FP method among People Living with HIV was 80% while 20% were not using FP methods...

Lack of health insurance, religion and waiting time at the health facility, fear of side effects were associated factors with not using a modern contraceptive. Furthermore, implants and injectable were found to be the most used contraceptive methods.

The study suggests that HIV positive women under ART need special support to avoid unintended pregnancies especially those who have two or more children. It is in that regards that counseling focusing on the side effects and its management is needed to improve the uptake of non-use of contraceptives methods .

5.2 RECOMMENDATIONS

From this result, we recommend to the Ministry of Health to organize a sensitization campaign focusing on counseling on side effects before providing family planning methods and the role of religion on the uptake of family planning methods.

Health worker's providers should also be encouraged to take the opportunity of the numbers of mothers that attend ART services and educate them on the unpredictability of complications of pregnancy and delivery.

There is also a need to strengthen the customer care by reducing the waiting time at the health facility to ensure that HIV positive women have better access to services during ART provision.

The study suggests that, counseling focusing on the adherence on health insurance and the use of long-acting reversible contraceptive (LARC) , good customer care to increase the uptake of modern contraceptive.

In the experience of contraceptive side effects that led to the discontinuation of services, health providers should make sure they always inform clients that experiencing minor side effects is a possibility and they should offer guidance and support on how to deal with the side effects.

Further studies can be done more on the depth of side effects, the experience of them, and how health providers deal with them among their clients.

REFERENCES

1. National institute of Statistics of Rwanda,Rwanda Demographic and Health Survey Rdhs / 2014-15.
2. Farmer DB, Berman L, Ryan G, Habumugisha L, Basinga P, Nutt C, et al. Motivations and constraints to family planning: A qualitative study in Rwanda's Southern Kayonza District. *Glob Heal Sci Pract.* 2015;3(2):242–54.
3. National institute of Statistics of Rwanda.Rwanda Demographic and Health Survey Rdhs / 2014-15.
4. WHO. Health Benefits and family planning. 1995.
5. Mekonnen TT, Woldeyohannes SM, Yigzaw T. C ontraceptive use in women with hypertension and diabetes: Cross-sectional study in northwest Ethiopia. *Int J Womens Health.* 2015;7(December):957–64.
6. Saeed H. Wahass (Wolter Kluwer). The role of psychologists in health care delivery. *J Family Community Med.* 2015;12(2): 63–:21.
7. Ministry of Health (MOH). National Institute of Statistic of Rwanda (NISR) [Rwanda] [Internet]. 2016. 307 p. Available from: <https://dhsprogram.com/pubs/pdf/FR316/FR316.pdf>
8. Muhoza DN, Broekhuis a, Hooimeijer P. Demand and unmet need to space births in Rwanda: a two-step analysis of determinants. *J Popul Soc Stud* [Internet]. 2015;23(1):57–72. Available from: [http://www2.ipsr.mahidol.ac.th/Journal/PDF/JPSS-Vol23\(1\)_Muhoza_Demand_and_Unmet_need_to_space_births_in_Rwanda.pdf](http://www2.ipsr.mahidol.ac.th/Journal/PDF/JPSS-Vol23(1)_Muhoza_Demand_and_Unmet_need_to_space_births_in_Rwanda.pdf)
9. Wadhams N. Progress in Rwanda's drive to slow population growth. *Lancet* [Internet]. 2010;376(9735):81–2. Available from: [http://dx.doi.org/10.1016/S0140-6736\(10\)61063-X](http://dx.doi.org/10.1016/S0140-6736(10)61063-X)
10. Mohammed A, Woldeyohannes D, Feleke A, Megabiaw B. Determinants of modern contraceptive utilization among married women of reproductive age group in North Shoa Zone, Amhara Region, Ethiopia. *Reprod Health.* 2014;11(1).
11. Fitrianto A. Family planning / Contraception Key facts Benefits of family planning / contraception. 2018;(February):1–9.
12. Mosadeghrad AM. Factors influencing healthcare service quality. *Int J Heal Policy Manag.* 2014;3(2):77–89.
13. Yaya I, Patassi AA, Landoh DE, Bignandi EM, Kolani K, Namoro ADD, et al. Modern contraceptive use among HIV-infected women attending HIV care centres in Togo: A cross-sectional study. *BMJ Open.* 2018;8(4):1–8.
14. Mitiku K. Modern Contraceptive Utilization and Associated Factors among HIV

- Positive Women on Antiretroviral Therapy in Mizan-Tepi Teaching and Referral Hospital, South-West Ethiopia. *J Contracept Stud.* 2018;02(02):1–9.
15. Bongomin F, Chelangat M, Eriatu A, Chan Onen B, Cheputyo P, Godmercy SA, et al. Prevalence and Factors Associated with Contraceptive Use among HIV-Infected Women of Reproductive Age Attending Infectious Disease Clinic at Gulu Regional Referral Hospital, Northern Uganda. *Biomed Res Int.* 2018 Jun 10;2018:1–8.
 16. Antelman G, Medley A, Mbatia R, Pals S, Arthur G, Haberlen S, et al. Pregnancy desire and dual method contraceptive use among people living with HIV attending clinical care in Kenya, Namibia and Tanzania. *J Fam Plan Reprod Heal Care.* 2015;41(1).
 17. Ross R, Fagan T, Dutta A. Is health insurance coverage associated with improved family planning access? A review of Household Survey Data from seven FP2020 countries, september , 2018.
 18. Morgan L, Wright J. The role of health insurance in family planning ,December 2014.
 19. Shaikh BT. Lessons from Islamic Countries Family Planning and Contraception in Islamic Countries : A Critical Review. 2013;(May 2014).
 20. Obasohan P. Religion, Ethnicity and Contraceptive Use among Reproductive age Women in Nigeria. *Int J MCH AIDS.* 2014;3(1).
 21. Adjei D, Sarfo JO, Asiedu M. Predictors of Contraceptive Use in Ghana: Role of Religion, Region of Residence, Ethnicity and Education. *J Advocacy, Res Educ.* 2014;(1):3–8.
 22. Chavane L, Dgedge M, Bailey P, Loquiha O, Aerts M, Temmerman M. Assessing women's satisfaction with family planning services in Mozambique. *J Fam Plan Reprod Heal Care.* 2017;43(3):222–8.
 23. Saka MJ, Yahaya LA, Saka AO. Counseling and Client Provider-Interactions as Related To Family Planning Services in Nigeria. *J Educ Pract.* 2012;3(5):16–25.

ANNEX 1:QUESTIONNAIRE

INSTRUCTIONS

This questionnaire has been passed over to you to find out your individual view on **factors associated with discontinuation of modern contraceptives among HIV Positive Women in Nyarugenge District.**

The response or information gathered remained confidential, as the research was mainly be for academic purposes.

PLEASE ANSWER ALL QUESTIONS.

PLEASE CIRCLE YOUR ANSWERS IN THIS SECTION.

No. Questions	Codes for Answers
SECTION 1 : SOCIO-DEMOGRAPHIC CHARACTERISTIC	
1	Where do you live? 1=Urban 0=Rural
2	What is your age? 18-24=1 25-30=2 31-37=3 38 and Above=4
3	What is your marital status? 1=Never married 2=Ever had sexual intercourse 3=Married/living together 4=Divorced or separated 5=Widowed
4	What's your education level? 1= None 2= Primary 3= Secondary or Post-secondary Education
5	What's your religion? 1=Christian 2=Muslim 3=Jehovah's Witness 4=none Specify_____
6	Are you employed and receive a regular salary 1=Yes 0=No
7	How many children do you have 1=0-1 2=2 or above

8	Do you have health insurance?	=Yes 0=No
9	What is your financial category (ubudehe category)	1=Cat 1 2=Cat 2 3=Cat 4=Cat 4
10	How many children do you have	1=0-1 2= 2 and above
11	How much money do you get per day

SECTION 2. CLINICAL, SEXUAL AND REPRODUCTIVE HEALTH, COUPLE COMMUNICATION AND COUNSELING CHARACTERISTICS

1	How long have you been tested
2	Are you currently on ARVs	1=Yes 0=No
3	How long have you been on ARVs	1=< 1 year 2=1-4 years 3=5 years or more
4	Are you currently sexually active without using condoms	1=Yes 0=No
5	Do you intend to have more children	0=No 1= Yes
6	Did you ever discuss with a partner the number of children?	0=No 1=Yes
7	Did you ever discuss with a partner on modern contraceptive use?	0=No 1=Yes
8	Did you ever receive counseling on modern contraceptives at health Center	0=No 1=Yes
9	Did you ever counseled on dual contraceptives at HC	0=No 1=Yes

10	Currently, are you on contraceptive	0=No 1=Yes
11	If yes, what modern contraceptive method do you use
12	If no, Why	
13	Did you ever given modern contraceptive at HC	0=No 1=Yes
14	Do you intend to use FP in the future	0=No 1=Yes
15	How long is the distance to the health center	0=No 1=Yes
16	Do you think that charging for FP is a barrier to FP uptake	0=No 1=Yes
17	Does your husband/partner support you using FP services	0=No 1=Yes
18	Did you, with your partner decide to use contraceptive methods	
19	If no, why?	
20	After discussion with your partner, what was her reaction about it	

SECTION 3: KNOWLEDGE AND USAGE OF AVAILABLE MODERN CONTRACEPTIVES

1	Do you know modern contraceptive methods?	1= Yes 0= No
2	Which methods do you know? 1= Injection (Depo Provera) 2= Pills (Microgynon and Microlut) 3= Male Condoms	

	<p>4=Female Condoms 5= Implant Jadelle 6= Implant DIU 7=Vasectomy 8=Tubal Ligation PLEASE TICK ALL THAT APPLY AND CIRCLE YOUR ANSWERS. DK= Don't Know READ A - G b. What is your knowledge of usage?</p> <p>Injection <input type="checkbox"/> Depo Provera <input type="checkbox"/></p> <p>How long is it effective? 1= 1 month 2= 2 months 3= 3 months 4= 4 months 5=DK</p> <p><input type="checkbox"/> Pills (Oral contraceptives)</p> <p>How often must they be taken?</p> <p>1= once a month 2= twice a week 3= sometimes 4= daily 5= DK</p> <p><input type="checkbox"/> Condoms</p> <p>How many times can you use a condom after your partner ejaculates?</p> <p>1= once 2= twice 3= three times 4= many times 5= DK</p> <p><input type="checkbox"/> Implant <input type="checkbox"/> Jadelle</p> <p>How long is it effective? 1= 1 year 2= 2 years 3= 5 years 4= 10 years 5= DK</p> <p><input type="checkbox"/> Implant DIU</p> <p>How long is it effective? 1= 1 year 2= 2 years 3= 5 years 4= 10 years 5= DK</p> <p><input type="checkbox"/> Vasectomy Male Sterilization</p> <p>How long is it effective? 1= 1 year 2= 2 years 3= 5 years 4= permanent 5= DK</p> <p><input type="checkbox"/> Tubal Ligation Female Sterilization</p> <p>How long is it effective? 1= 1 year 2= 2 years 3= 5 years 4= permanent 5= DK</p>
3	<p>Which methods are provided at your health Center?</p> <p>0= Don't know 1= Injection Depo Provera 2= Pills (Microgynon and Microlut) 3= Condoms 4= Implant Jadelle 5= Implant DIU 6=Vasectomy 7=Tubal Ligation</p>
4	<p>Which methods are provided by your community health worker?</p> <p>0= Don't Know 1= Injection Depo Provera 2=Pills (Microgynon and Microlut)</p>

		3= Condoms 4= Implant Jadelle 5= Implant DIU 6=Vasectomy Male 7=Tubal Ligation Female
5	Which contraceptive methods did you use?	1= Injection Depo Provera 2= Pills (Microgynon and Microlut) 3= Condoms 4= Implant Jadelle 5= Implant DIU 6= Vasectomy Male 7=Tubal Ligation Female

SECTION4: PERCEIVED QUALITY OF SERVICES

In this section, please circle one option from only in each row

1= Strongly Disagree 2= Disagree 3= Neither Agree or Disagree

4= Agree 5= Strongly Agree

1	I was informed of possible side effects.	1 2 3 4 5
2	My community health worker attempted to reach me after I stopped using FP services.	1 2 3 4 5
3	My health providers gave me good physical care.	1 2 3 4 5
4	My health providers gave me good advice.	1 2 3 4 5
5	I frequently waited a long time when I came for services.	1 2 3 4 5
6	Contraceptive methods and other materials were available when I came for services.	1 2 3 4 5
7	My health providers treated me with respect.	1 2 3 4 5
8	My health providers answered all of my questions.	1 2 3 4 5
9	My health providers kept my privacy.	1 2 3 4 5

SECTION 5: PREDICTORS TO FAMILY PLANNING UPTAKE AMONG HIV POSITIVE WOMEN

1. Why HIV positive women do not initiate the use of family planning methods?

- 1= Desired pregnancy
 - 2= Accidentally became pregnant
 - 3= Distance to community health worker and health center is too far
 - 4= Became ill from something else not related to contraceptives
 - 5= Out of town
 - 6= service are expensive
 - 7= No longer have a partner
 - 8= No longer having sex with partner
 - 9= Infrequent sex
 - 10= Husband does not support me in my choice to use modern contraceptives
 - 11= My religious beliefs conflict with using contraceptives
 - 12=Lack of health insurance
 - 13= I don't have knowledge about family planning
 - 14= Side Effects
- If yes, which ones?
-

How long did you experience side effects after you started using FP method ?
 1= 1-3 months 2= 4-6 months 3= more than 7 months

- 2. What is the time distance between your residence and the Health facility**
- 1. Less than 30 minutes
 - 2. Between 30 minutes and 1 hour
 - 3. Between 1 hour and 1:30
 - 4. More than 1:30

- 3. When you want to go to the HC for adequate care in FP, how long does it take?**
- 1. Less than 30 minutes
 - 2. Between 30 minutes and 1 hour
 - 3. Between 1 hour and 1:30
 - 4. More than 1:30

4. Did you pay for the FP services you lastly received at the HF? 1= Yes or 0=No

5. How much did you pay?

FOCUS GROUP DISCUSSION GUIDE

Questions concerning attitude towards contraceptive use		
1	How do you feel when people talk to you about contraceptive use
2	Can tell us why HIV Positive women prefer to use Modern contraceptive methods
3	Can tell us why HIV Positive women prefer to do not use Modern contraceptive methods
Now let's talk about what people in their life and the media tell you about contraceptive use.		
4	Kindly tell us side effects of using modern contraceptive methods?
5	How important is it for HIV positive woman to use modern contraceptive methods

ANNEX 2: INFORMED CONSENT FORM (ENGLISH VERSION)

Participant's code:

Date:/...../.....

Study title: Predictors of Modern Contraceptive Methods Use among Women Living with HIV in Nyarugenge District, Rwanda.

Investigator: Mr. GITERA Joseph, Phone: 0788647126, FELTP resident 4th cohort
Supervisor: Ass.Prof.Aline UMUBYEYI, UR-CMHS-SPH, *Phone: +250788412644*

Co-supervisor: Dr.Vedaste NDAHINDWA *Phone: +250788454613*

Informed Consent: This form is to explain to you important details of the study before you decide whether to or not to participate. You need to understand its purpose, how it may help you, any risks to me and any member of the family, and what is expected of me if you decide to participate

Introduction

In Rwanda, there is a wide range of modern contraceptive methods available that the government has been committed to ensuring its citizens. Family Planning services are available in Rwanda and include methods such as injectable, pills, implants, Device Intra Uterine (DIU), female and male sterilization, and other non-hormonal methods that do not cause side effects but the majority of women living with HIV do not decide to use modern contraceptive methods. The study will be carried out to assess the predictors, practices and enabling factors associated with the use of family planning among HIV positive women in Nyarugenge District.

Benefits: The results of this study will be used by stakeholders to improve service delivery and increase the uptake of women living with HIV in family planning using modern contraceptive methods.

Risks: There will be no risk to provide information.

Voluntariness: Participation in the study will be fully voluntary. You are free to refuse to participate or withdraw from the study at any time. There will be no financial reward for participating in the study.

Confidentiality: The information obtained about you and the result of the blood test will be treated with confidentiality and identification will not be released to any person or forum without your permission. All data collected in hard copy will be kept in a lockable cabinet where the researcher only will access to maintain confidentiality. Information stored in soft copies will be protected from access from unauthorized persons by a password which will be changed periodically. All records will be identified by the study identification number.

Questions: For any questions, contact the University of Rwanda, College of Medicine and Health sciences the Chairperson of the CMHS IRB (0788 490 522) and of the Deputy Chairperson

(0783 340 040), the supervisor of this research on 0785255388 or use my cell phone 0788841781.

Participant’s statement:

I,....., after having received adequate information regarding the study research, risks, and benefits hereby AGREE to participate in the study with malaria species prevalence. I understand that participation is fully voluntary and that I am free to withdraw at any time. I agree that the researcher can collect sample blood for malaria testing and ask questions. I have been given adequate opportunity to ask questions and seek clarification on the study and these have been addressed agreeably.

Participant’s Signature

Date /.... /....

Investigator’s declaration

I,....., declare that I have sufficiently explained to the participant the study procedure, risks, and benefits and given him /her time to ask questions and seek clarification regarding the study. I have answered all the questions raised to the best of my ability.

Interviewer’s Signature Date /..... /.....

ANNEX 3. Authorization to access data

REPUBLIC OF RWANDA

Kigali, March 22nd 2019



KIGALI CITY

NYARUGENGE DISTRICT

MUHIMA HOSPITAL

P.O. BOX 2456 KIGALI

Tel. /Fax : +252 50 37 7

E-mail : muhima.hospital@moh.gov.rw

GITERA Joseph

Re: Your request for accessing data from patient's files and conduct Focus Group Discussion

Dear Joseph,

Reference made to your letter received on March 19th 2019 requesting to access data from patient's files and conduct focus group discussion at the following health facilities within Muhima District hospital catchment: Biryogo, Butamwa, Gitega, Kabusunzu, Muhima, Rugarama health centers and Muhima District Hospital for your research project entitled: *Predictors of Modern contraceptive methods use among women living with HIV in Nyarugenge District, Rwanda.*

I would like to inform you that your request is approved and at the end the administration of Muhima hospital shall need to be given the final report of your study.

Yours sincerely,

MANIRAGUHA YEZE Aimée Victoire

Chief Ethic Committee

Cc:

Clinical Director
Director of Nursing
Head of Biryogo health center, Head of
Butamwa health center Head of Gitega
health center, Head of Kabusunzu health
center, Head of Muhima health center, Head
of Rugarama health center

