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FACTORS DETERMINING THE CHOICE OF MODERN CONTRACEPTIVE METHOD AMONG WOMEN IN KIGALI CITY: A CASE STUDY OF MUHIMA District hospital and GITEGA health center

Dissertation submitted in partial fulfilment of the requirements for the award Degree of Master of Medicine in Obstetrics and Gynaecology of the University of Rwanda – College of Medicine and Health Sciences – School of Medicine

By NSENGA BAKINAHE, MD
Supervisor: Stephen RULISA, MD, MMed.

Kigali, February, 2014

DECLARATION

I hereby declare to the best of my knowledge that the work presented in this dissertation has not been presented for any award in any institution and has never been published anywhere.

All the work is original unless otherwise stated; I'm therefore presenting it for the award of Degree of Master of Medicine (Obstetrics and Gynecology) of Rwanda University.

…… Date……

NSENGA BAKINAHE

This dissertation has been submitted for examination with the approval of the following supervisor:

…… Date……

Dr. Stephen Rulisa, MD, MMed

Senior Lecturer

Department of Obstetrics and Gynecology

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DEDICATION

To the almighty GOD, provider of intelligence and wisdom,

To my beloved father, Stani BAKINAHE,

To my mother, sisters, brothers and all relatives,

To my future spouse,

I kindly dedicate this dissertation.

NSENGA BAKINAHE, MD

ACKNOWLEDGEMENT

The achievement of this work is result of many people to whom we are expressing our feelings of gratitude.

My deepest appreciation is expressed to the senior lecture Dr Stephen RULISA, who is the director of this thesis; his generous assistance, availability and wonderful comments despite lot of responsibility have been a great importance for the realization of this work;

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To my colleague residents, nurses who helped us, women how accepted to participate to this study also we also deserve special recognition

To all of you who participated directly or indirectly in the realization of this work, we really say thanks.

LIST OF TABLES

LIST OF ABBREVIATIONS

CPR : Contraceptive prevalence rate

Df : Degree of freedom

DH : District Hospital

DMPA : Depot Medroxy Progesterone Acetate

FP : Family planning

HC : Health Center

ICPD : international conference on population and development

IUD : Intra Uterine Device

LAM : Lactation Amenorrhea Method

MC : Modern Contraception

MCS : Modern Contraception Seekers

MOH : Ministry of Health

No : Number

OBGYN: Obstetrics and Gynaecology

OCPS: Oral Contraceptive Pills

OMDP : Oral Medium Depot Provera

PI: Pearl Index

RDHS : Rwanda Demographic and Health Survey

SDM : Standard Day's Method

SPSS : Statistical Package for Social Scientists

WHO : World Health Organization

X^2 : Chi-square

ABSTRACT

Context: Contraceptive method choice and use related complications and health risk are worldwide problem that affect women their family and society.

Objective: The overall aim of this thesis was to study and identify the various factors determining women's choice of modern contraception; in order to avoid the future error choice and improve choice compliance**.**

Method: A cross sectional study and descriptive health facility based survey on women seeking contraceptive services at Muhima District hospital and Gitega health center was undertaken

A sample size of 400 women was calculated and considered in this study.

Result:

- ✓ **We observed that**: The advices from friends and family members was the strongest influencing choice (43%) and the least influencing factor was the religious believe (3, 25%)
- ✓ **The Chi square analysis showed that**: The age, level of education and number of living children had a significant influenced choice, respectively the calculated P values: were :(0.01; 0.035 and 0.002).

The marital status, occupation and religion had no significant influenced choice with respectively calculated P values of :(0.08; 0.31and 0.54).

Conclusion: The modern contraceptive method choice among women stills misconduct in Kigali city; from this study an education of women targeted on choice behavior is needed.

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I.INTRODUCTION

I.1. Background:

In order to improve the efficacy of available modern contraceptive methods, it is importance to identify factors determining women's choice and use of modern contraceptive method and how they proceed choosing these method.

Such knowledge is important for better understanding of contraceptive compliance; considering that contraceptive method choice and use related complications and health problems, are worldwide problems that affect women, their family and society [3]

Thus understanding how and why women make the decision of modern contraceptive method choice , is very important to minimize the likely hood side effects, complications, unintended pregnancy with their consequences on maternal morbidity and mortality post an illegal abortion; on maximizing users satisfaction, effectiveness, and continuation use .[4,5]

In addition for personal choice, women have to consider the health risk and complications related to each method, as well as consequences from erroneous choice that might also be fatal with serious side effects including health risks from pregnancy if the methods fail [6].

1.2. Problem statement

Child bearing with contraceptive choice and use are among the most important reproductive health decision that many have to make (3).

Rwanda's MoH, in order to reach the maternal health related to Millennium Development Goals, needs to invest significant efforts to sustain the increasing trends in the coverage of family planning; meaning that the more women will use family planning methods the more they will reduce risk of maternal death (4)

It is known that no country in the world can claim to achieve sustainable development without demographic planning; thus, the WHO reveals that, the promotion and use of family planning in

countries with high birth rates (Africa) has the potential to reduce poverty and hunger and avert 32% of all maternal deaths and nearly 10% of childhood deaths. (2, 10)

I.3. Study justification:

The aim of this study is to develop an understanding on factors which determine the decision making choice of a modern contraceptive method among women, in order to avoid an erroneous choice and its related health risk in the future

Thus, an unorganized contraceptive method choice and bad use is common among women and can threaten their health and wellbeing in those who have existing health problems and those who don't have family; financial or emotional support [8, 9].

Choosing and using a modern contraceptive method superficially seem to be a personal matter; however studying choice behavior can help family planning providers to meet the need of fertility regulations through expanding the really safe, effective, and convenient choice of family planning methods which can be used properly. [10]

In Kigali city, the contraceptive method choice and its influence factor remains unclear for seekers and providers, thus understanding how women proceed to determine the contraceptive method choice will be helpful for contraceptive providers to offer the method which is convenient to the users

I.4. Research question

What are factors that determine the choice of modern contraceptive methods among women of reproductive age in Kigali city?

I.5. Research hypotheses

The socio demographics and reproductive factors have certain influence on the modern contraceptive method choice.

The religious belief and the marital status have a significant influence on the choice of modern contraception method.

The advices from friends and relatives, counseling by health workers have a significant influence on the choice of modern contraception method.

Level of education and occupation has a significant influence on the choice of modern contraception method.

The number of living children has a significant influence on the choice of modern contraception method.

I.6. Literature review

I.6.1. Contraception in Rwanda: Overview

Rwanda is the most densely populated country in Africa and one of the fastest growing economies in the region; [1, 4]

The first population program that included family planning was initiated in Rwanda in 1982 after the United Nations International Conference on Population and Development (ICPD) in Cairo. [1].

The contraception rate in 2008 was 27%, while in2010 it's45% for modern methods, 99**%** of women and 100**%** of men know at least one modern contraceptive method. [1, 4].

According to RwandaDHS2010, among the contraceptives methods used: The modern methods; include the pill; inject able, intra-uterine device (IUD), implant, male condom, female condom, standard day's method (SDM), lactation amenorrhea method (LAM), female sterilization, and male sterilization.

Traditional methods include periodic abstinence or rhythm, withdrawal, and other folk methods.

The public sector is the most commonly used source for most contraceptive methods. [1, 4]

I.6.2. General Concepts of contraception choice

Family Planning is the planning of when to have children and the use of birth techniques to implement such plans. Other techniques commonly used include sexual education, prevention and management of sexually transmitted diseases, pre-conception counseling, management and infertility management (9, 10).

However family planning is usually used as a synonym for the use of birth control. It is most adopted by couples who wish to limit the number of children they want to have and control the timing of pregnancy, also known as spacing of children (9, 11)

Contraceptive choice is shaped by several factors; Prior studies have shown the importance of macro level supply factors such as family planning program that directly and indirectly affect contraceptive choice. (12)

In the some author's studies the programme factors were found to affect use of specific contraception. ; This supported the view and stated that "Promotion of a method by program personnel can add significantly to method choice" (13).

Program bias on a specific method will lead to provider bias on that method. This makes the specific method readily accessible to the couples. Besides, providers create more awareness about this method than others which ultimately leads couples to choose it. [13]

The integration of Maternal and Child Health care with Family Planning has probably contributed to the program bias for female method in particular. On the other hand informed choice in a program me away with the provider bias [15]

Individual level socio-economic and demographic factors like age, religion, caste, education, standard of living, place of residence, affect choice of contraception in some way or other (12).

In addition to individual level factors, community level factors also conceivably play a role; Social networks through communication and diffusion affect the choice also the choice of an individual is influenced by "information from early adopters in their social network" (15).

In a theoretical framework suggested by Bulatao contraceptive method choice is affected by four types of factors: Contraceptive goals, Contraceptive competence, Contraceptive evaluation, and Contraceptive access (16).

I.6.3. Factors determining contraceptive choice and use

A myriad of different factors affect a person's personal decisions about what types of family planning method to be used. [9, 17]

Effectiveness

People who are not in a financial or emotional situation to have children might opt for the most effective type of family planning in order to avoid pregnancy might choose a less effective of contraception method, such as natural family planning.

Religion

Some religions such as Catholicism have restrictions on contraception based on the belief that, it is God's will to bring children into the world; According to Dixon-Muller (1999).

Cost

Some forms of contraception, such as minor surgery like vasectomy, carry a fairly significant amount of one's time and cost hence couples engage in other options, such as condom or the calendar cycle methods which are less expensive.

Health risk

For people with multiple sexual partners the choice to use family planning devices helps them to keep healthy. For example, using condoms can reduce the risk of contracting sexually transmitted diseases.

Permanence

Some contraception choices, such as vasectomy, are usually permanent.

Partner involvement

One has to consider the preferences of his or her partner when choosing a birth control option. For example, some men do not like to have sex using a condom; in that case hormonal contraception might be a better choice for preventing an unwanted pregnancy.

Socio-economic factors

There are some contraceptive methods of family planning that are expensive, and some couples cannot afford to use or purchase them due to their financial situations in the society.

For instance, people in rural areas cannot afford to use the expensive contraceptive methods of family planning such as vasectomy, Intra-uterine devices (IUD) (which are small, flexible, plastic frame inserted in the vagina of women), female sterilization method.

Cultural norms factors

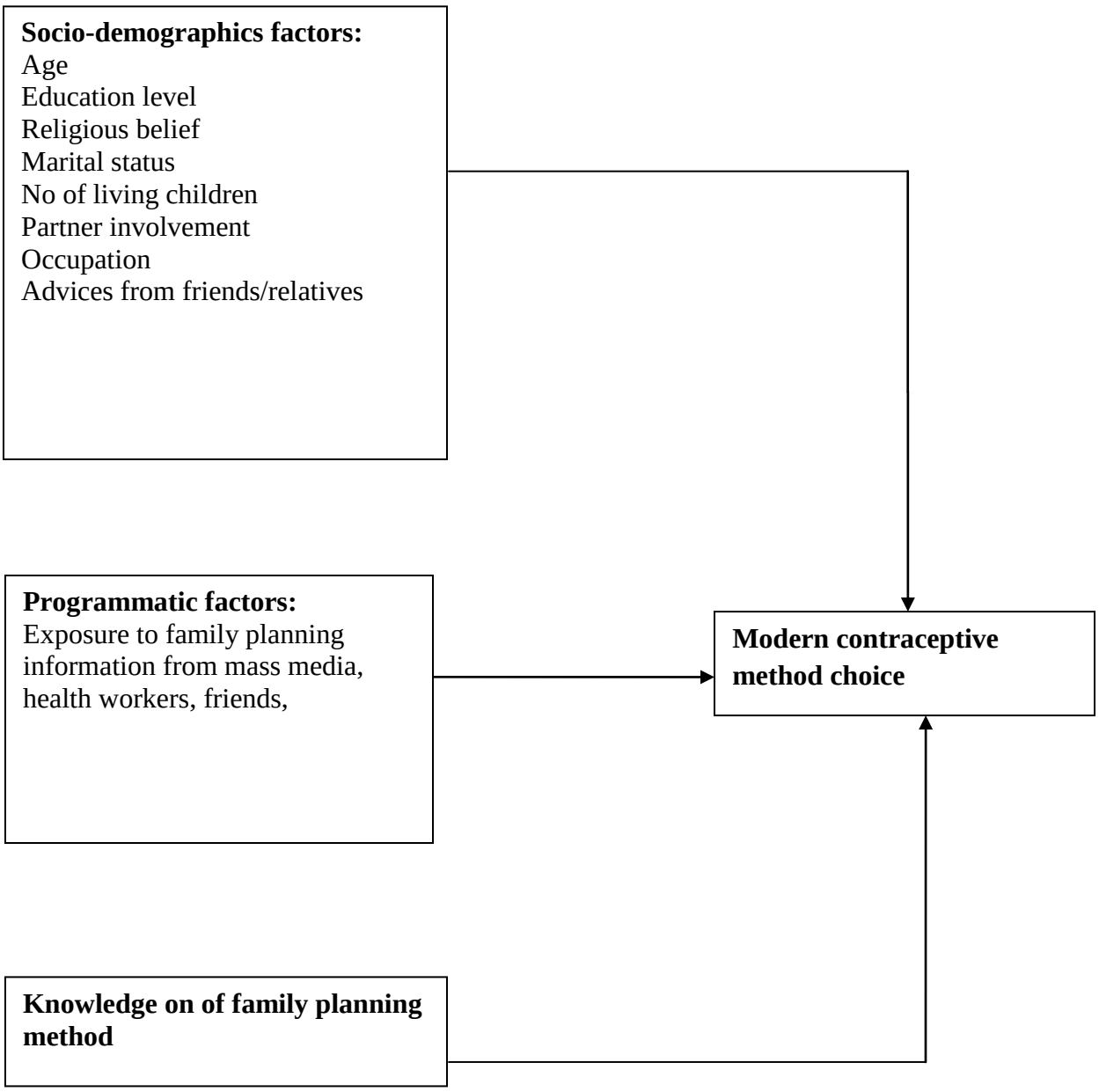
This is the most important factor influencing the choice of family planning among couples.

This includes: Community norms, religious belief and gender role.

Table 1: The estimated efficacy range of different contraceptive methods, expressed as Pearl Index (PI). [15]

Method	**Approximately PI (%)**
Combined hormonal methods	0,5–1,5
Oral medium-dose progestogen	0,5–1,5
Oral low-dose progestogen	2–6
High-dose progestogen injectable	0,1–0,5
Implants	0,1–1,0
Copper IUD (surface area >250mm2)	0,7–1,0
Levonorgestrel releasing intrauterine system	0,2–0,6
Condom	3–14
Diaphragm	6–20
Natural family planning	2–20
Lactation amenorrhea method (LAM)	0,8–1,2
Sterilization female/male	0,1–0,5

Figure 1: The conceptual framework between dependent and independent variables



II. OBJECTIVES

II.1. Global

The overall aim of this thesis is to study and identify the various factors determining women's choice of modern contraception; in order to avoid the future error choice and improve choice compliance.

II.2. Specifics

To identify socio demographic and reproductive factors which shape women's choice of modern contraception.

To assess whether the marital status and advices from friends have an influence on the choice.

To assess whether the religious believers and educational level have an influenced choice.

To assess whether the contraceptive services, the occupation have an influence on choice.

To identify sources of knowledge of modern contraceptive methods among women.

III. METHODOLOGY

III.1. Description of the setting

The study was conducted in Kigali city precisely in the two different sites: one District hospital (Muhima) and one health center (Gitega) in which contraceptive services are organized.

Muhima District hospital is a hospital of Nyarugenge District whereas Gitega health center is located in Nyarugenge District near Kigali teaching Hospital, and it's refers to Muhima district hospital.

III.2. Type of study:

It's a cross-sectional and descriptive health facility based survey study on women seeking contraceptive services in one District hospital and one health center of Kigali city.

III.3. Duration of study:

This study lasted 14months: 1st January 2013- 28february2014

III.4. Inclusion and Exclusion criteria:

The target population in our study included women in reproductive age (15-49) years old, seeking family planning services in the two different sites: Muhima District hospital and Gitega health center.

Women who didn't satisfy the inclusion criteria were excluded.

III.5. Data collection:

We used a questionnaire, developed by the researcher, on factors influencing the choice of modern contraception among women in one District hospital and one health center of Kigali city which included socio-demographic status, religious factors, cultural norms, educational status, obstetric history and the involvement of partners and contraceptive providers.

The questionnaire was distributed to family planning seekers by the co-investigators in collaboration with the principal investigator; the principal and co-investigators explained and helped the contraception seekers how to use the questionnaire considering theirs preconceived choice of contraceptive method.

An In-dept. interview of Family planning providers and family planning seekers was helpful for sourcing of more information on factors shaping the contraceptives method choice ; the questionnaire was written in English then translated in Kinyarwanda.

Kinyarwanda, English and French were the language of communication

III.6. Sample size

The sample size was calculated using the formula of Kish and Leslie (1965)

$$N=\frac{Z^2xPxQ}{e^2}$$

Z: standard deviation corresponding to 95% confidence interval (1.95)

P: prevalence of women using contraception

Q: prevalence of women not using contraception (Q=1-P)

E: desired level of precision: 5%

P=49 %prevalence of modern contraception users in Kigali city (source: Rwanda Ministry of Health Annual Health statistics Booklet 2011.) [4]

$$\mathbf{N=\frac{(1.95)^2x0.48x\ (1-0.48)}{(0.05)^2}\ =\sim 400 women}$$

III.7. Data management and analysis

We used SPSS Version 16.0 for data entry, data cleaning, analysis (cross-tabulation and Chi-square tests) and interpretation.

Results were presented as frequency tables, contingency tables , graphs and percentages, for the text used Microsoft Word 2013 and Graphics were made using Microsoft Excel 2013.

III.8. Variables

The outcome/response variable in this study was modern contraceptive method choice.

The explanatory/independent variables were divided into four categories

- Socio-demographic variables
- Obstetric history variables
- Programmatic factors.
- Knowledge of family planning methods and/or side effects

III.9. Ethical considerations

Privacy was ensured throughout the study;

The modern contraceptive seekers (MCS) were explained about the study and signed a consent form. The permission of conducting the study was obtained from the Director of Muhima DH and from the titular of Gitega HC.

Ethical approval was obtained from the department of OBGYN and the Faculty of Medicine, Research and ethics committees.

IV. RESULTS AND DISCUSSION

IV.1. Descriptive statistic

IV.1.1.Age distribution

We had a total of 400 contraceptive seekers (MCS), the mean age was 28 years with a standard deviation of 3.9 years ;we grouped MCS into four groups with a range 10 years.

Table 2: **Age distribution**

Age groups	**Number of MCS**	**Percentage**
15-25 years	99	24.75%
26-35 years	286	71.50%
36-45 years	15	3.75%
Total	**400**	**100 %**

This table shows that the group of MCS between 26 and 35 years had the biggest proportion of MCS (71.5%),followed by the group of MCS between 15 and 25 years (24.75%). The remaining proportion (3.75%) included MCS ranging between 36 and 45 years of age.

IV.1.2. Marital status

We enquired the marital status of all 400 MCS. We grouped them into 4 groups.

Marital status	**Number of MCS**	**Percentage**
Married	313	78.50%
Not married	48	12%
Divorced	36	9%
Widowed	3	0.70%
Total	**400**	**100%**

On a total of 400 MCS 313 (78.5%) were married, 48 (12%) were not married, 36(9%) were divorced and only 3(0.7%) were widows.

IV.1.3. Occupation

Among 400 MCS, we found that 193 (48.25%) were employed, 188(47%) were unemployed and 19 (4.7%) were students

Table 3: MCS frequency per occupation

Occupation	Number of MCS	Percentage
Employed	193	48.25%
Unemployed	188	47%
students	19	4.70%
Total	**400**	**100%**

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IV.1.4. Religious belief

The majority of the MCS were of catholic religion: 171 MCS (42.75%) followed by Protestant: 140 MCS (35%), Muslim: 71 MCS (17.75%) and other religions: 18 MCS (4.5%).

Table 4: frequency of MCS per religion

Religion	Number of MCS	Percentage
Muslim	71	17.75 %
Protestant	140	35 %
Catholic	171	42.75 %
Others	18	4.5 %
Total	**400**	**100 %**

IV.1.5. Level of education

Our findings were as follow: 184 MCS (46%) had secondary education, 107 MCS (26.75%) had primary education, 61 MCS (15.25%) had university education and 48 MCS (12%) were illiterate.

Table 5: MCS frequency per level of education

Level of education	**Number of MCS**	**Percentage**
Illiterate	48	12%
Primary level	107	26.75%
Secondary level	184	46%
University level	61	15.25%
Total	**400**	**100%**

IV.1.6. Number of living children

We grouped our MCS into 3 groups. Our findings were the following: 247 MCS (61.8%) had 1 or 2 living children, 122 MCS (30.5%) had 3 or 4 children and 21 MCS had 5 children or above.

Table 6: MCS frequency per number of living children

Number of living children	**Number of MCS**	**Percentage**
1 and 2	247	61.8 %
3 and 4	122	30.5 %
5 and above	21	5.2%
Missing data	10	2.5%
Total	**400**	**100%**

IV.1.7. Frequency of MCS per contraceptive choice

The following is a table shows different types of modern contraception methods chosen by our MCS.

Table 7: Contraceptive choice frequencies

	Number of MCS	**Percentage**
Depo-Provera	193	48.25 %
IUD	66	16.5 %
Norplant	83	20.75 %
Pills	47	11.75 %
Other	11	2.75 %
Total	**400**	**100%**

This results brings up the finding that the most chosen contraceptive method is Depo-Provera (48.25 %).followed by Norplant (20.75); IUD (16.5); Pills (11.75); others (2.75).

IV.1.8. Source of information on modern contraceptive methods

The results below shows that on a total of 400 MCS, 189 MCS (47.25%) were informed on modern contraceptive methods by their friends and family members. 167 MCS (41.75%) received that information from health workers, 40 MCS (10%) from the media and 4 MCS (1%) from other sources of information.

Table 8: Source of information frequencies

Source of information	**Number of MCS**	**Percentage**
Friends and family	189	47.25%
Health workers	167	41.75%
Media	40	10%
Other	4	1%
Total	**400**	**100%**

IV.1.9. Factors influencing the modern contraceptive method choice

We analyzed responses given by MCS about factors influencing their choices on modern contraceptive methods. The following were founded:

Table 9: Frequencies of influencing factors

	Number of MCS	**Percentage**
Counseling by health pro.	54	13.5 %
Marital opinion	51	12.75 %
No. of children	75	18.75 %
Friends' advice	172	43 %
Education level	35	8.75 %
Religious belief	13	3.25 %
Total	**400**	**100 %**

Among the 400 MCS, 174 MCS (43%) reported that their choices were influenced by the advices from friends and relatives. 74 MCS (18.75%) reported to have been influenced by the number of children they had. 54 MCS (13.5%) reported to have been influenced by the counseling from health professionals. 51 MCS (12.75%) reported that their choice was influenced by the opinions of their husbands. 35 MCS (8.75%) reported that their choices were influenced by their education level. 13 MCS (3.25%) reported that they were influenced by their religious belie

IV.2. Chi-square tests

Through the process of cross tabulation we created 7 contingency tables. Each contingency table showed observed numbers for each influencing factor versus the contraceptive choice.

The Chi-square tests was used to determine association between the different factors (age, marital status, occupation, religious believes, education level, number of living children) and the outcome which is the contraceptive choice.

The null hypothesis "H_0: there is no association or influence" is accepted if the calculated P value is above the level of significance or the calculated Chi-square value is below the critical value.

We set the level of significance at 0.05 and the degrees of freedom were calculated using the following formula: Df: degree of freedom, R: number of rows, C: number of columns.

We used the level of significance and the degree of freedom to determine critical values using the X^2 table; X^2 tests were done using SPSS which provided calculated X^2 values and P values.

The following is the X^2 formula: $\sum \frac{(O - E)^2}{E}$ with, O: observed values, E: expected values

IV.2.1. Age groups vs. Contraceptive choice

		Contraceptive choice					
		Depo	IUD	Norplant	Pills	Other	**Total**
Age groups	15-25 years	37 (19.2%)	21 (31.8%)	25 (30.1%)	14 (29.8%)	2 (18.2%)	**99 (24.8%)**
	26-35 years	147 (76.2%)	44 (66.7%)	57 (68.7%)	32 (68.1%)	6 (54.5%)	**286 (71.5%)**
	36-45 years	9 (4.7%)	1 (1.5%)	1 (1.2%)	1 (2.1%)	3 (27.3)	**15 (3.8%)**
	Total	**193 (100%)**	**66 (100%)**	**83 (100%)**	**47 (100%)**	**11 (100%)**	**400 (100%)**

Table 10: Age groups vs. Contraceptive choice cross-tabulation

The first null hypothesis stated that there is no association between the age of modern contraceptive seekers and the contraceptive choice,

The calculated P value was 0.01. Therefore, we rejected the null hypothesis concluding that there is a significant association between the age of the MCS and the contraceptive choice.

IV.2.2. Marital status vs. Contraceptive choice

		Contraceptive choice					
		Depo	IUD	Norplant	Pills	Other	**Total**
Marital status	Married	144	49	67	46	7	**313**
	Not married	27	10	10	0	1	**48**
	Divorced	20	7	5	1	3	**36**
	Widowed	2	0	1	0	0	**3**
	Total	**193**	**66**	**83**	**47**	**11**	**400**

Table 11: Marital status vs. Contraceptive choice cross-tab

The second null hypothesis stated that there is no association between the marital status and the contraceptive choice,

The calculated P value was 0.08; we accepted the null hypothesis that there is no significant association between the marital status and the contraceptive choice.

IV.2.3. Occupation vs. Contraceptive choice

		Contraceptive choice					
		Depo	IUD	Norplant	Pills	Other	**Total**
Occupation	Employed	87	36	43	23	4	**193**
	Unemployed	96	26	39	22	5	**188**
	Student	10	4	1	2	2	**19**
	Total	**193**	**66**	**83**	**47**	**11**	**400**

Table 12: Occupation vs. Contraceptive choice cross-tab

The third null hypothesis stated that there is no association between the occupation and the contraceptive choice.

The calculated P value was 0.31; therefore we accepted the null hypothesis stating that there is no significant association between the occupation of MCS and the contraceptive method choice.

IV.2.4. Religion vs. Contraceptive choice

		Contraceptive choice					
		Depo	IUD	Norplant	Pills	Other	**Total**
Religion	Muslim	39	12	11	8	1	**71**
	Protestant	54	26	35	20	5	**140**
	Catholic	89	27	34	17	4	**171**
	Other religion	11	1	3	2	1	**18**
	Total	**193**	**66**	**83**	**47**	**11**	**400**

Table 13: Religion vs. Contraceptive choice cross-tab

The fourth null hypothesis stated that there is no association between the religion and the contraceptive choice.

The calculated P value was 0.54; we accepted the null hypothesis there is no significant association between the religion and the contraceptive choice.

IV.2.5. Education vs. Contraceptive choice

		Contraceptive choice					
		Depo	**IUD**	**Norplant**	**Pills**	**Other**	**Total**
Education level	Illiterate	17	11	12	5	**3**	**48**
	Primary level	52	16	23	13	**3**	**107**
	Secondary level	85	30	38	29	**2**	**184**
	University level	39	9	10	0	**3**	**61**
	Total	**193**	**66**	**83**	**47**	**11**	**400**

Table 14: Education vs. Contraceptive choice cross-tab

The fifth null hypothesis stated that there is no association between the education level and the contraceptive choice. Our calculated P value was 0.035; we concluded by rejecting the null hypothesis, therefore ‘’there is a significant association between the education level and the contraceptive choice.’

IV.2.6. Number of living children vs. Contraceptive choice

		Contraceptive choice					
		Depo	**IUD**	**Norplant**	**Pills**	**Other**	**Total**
Living children	1and 2	117	43	63	23	1	**247**
	3 and 4	62	17	19	19	5	**122**
	5 and above	10	3	1	5	2	**21**
	Total	**189**	**63**	**83**	**47**	**8**	**390**

Table 15: Number of living children vs. Contraceptive choice cross-tab

The last alternative null hypothesis stated that there is no association between the number of living children and the contraceptive choice. Calculated P value was 0.002, therefore we rejected the null hypothesis, and we concluded that there is a significant association between the number of living children and the contraceptive choice

IV.2.7. Summary of X^2 tests results

Table 16: Summary of X^2 tests result

Conclusion	Calculated P value	Level of significance
1. The age significantly influence the contraceptive choice	0.01	0.05
2. The marital status significantly do not influence the contraceptive choice	0.08	0.05
3. The occupation significantly do not influence the contraceptive choice	0.31	0.05
4. The religion do not significantly influence the contraceptive choice	0.54	0.05
5. The education level significantly influence the contraceptive choice	0.035	0.05
6. The number of living children significantly influence the contraceptive choice	0.002	0.05

V.DISCUSSION

A total of400 woman participated in this study which makes a response rate of 100%

V.1. Descriptive statistic

V.1.1. Age distribution

We found that the majority of our MCS are between 26 and 35 years of age. A similar study conducted by Fasil et al (2006, Ethiopia) (6) had similar findings;

UWIRAGIYE. C., (Rwanda2013) (2); found also that women aged between 25and 34 were more likely to use modern contraception than others age groups

The MCS between the age of 36 and 45 years represent only 3.75% of all our MCS, this could be reflected by the reality that women at the older age could feel either approaching menopause hence, no need for using modern contraception.

This is similar to what was found by Magadi A. et al (2003, Kenya). (3);

Fasil (2006, Ethiopia)(6) find also that the proportion of contraception use decline among couples after 35 years of age.

V.1.2. Marital status

The study identified that the majority of MCS were married (78.5%) , this finding is similar to that found by Rwanda MoH (2011, health statistic booklet) (4) where 76 % of FP seekers were married.

Boniface et al (2001, Nigeria) [17] in a multivariate analysis showed also that older, married and more educated women tended to use contraceptives more

V.1.3. Occupation

The study found that most of clients were employed (48.25%); than (47%) were unemployed and 19 (4.7%) were students

Similar findings have been observed by another author, UWIRAGIYE. C., (2013, Rwanda). (2)

Fasil.H. (2006, Addis Ababa). (6) In his study, showed also that concerning occupation, the majority of the cases 201 (70.5%) were employed (housewives).

V.1.4. Religious belief

In ours study, the Christianity represent the highest proportion of MCS; (42.75%) for catholic and (35%) for protestants.

UWIRAGIYE.C, (2013, Rwanda). (2).found similar observations, those catholic women represented the majority of users of MCS.

This is supported by the fact that in the Rwandan general population, Catholics and Protestants represent the majority (83.9%) (2010, Rwanda DHS) (1).

We found that Muslims represented 17.75% of our MCS. A study conducted by Shahid et al (1993, Bangladesh) (18) revealed also that the percentage of current users of contraceptive methods among Muslims was significantly lower than their non-Muslim counterparts (30.2% and 36.3%, respectively)

V.1.5. Level of education

The study found also that: 184 MCS (46%) had secondary education, 107 MCS (26.75%) had primary education, and 48 MCS (15.25%) were illiterate.

The World Bank,(1995, Zimbabwe)(19) found the similar results that women who have completed secondary school were about twice as likely to use modern contraceptive methods than women who didn't complete primary schooling (9).

These results showed that women who had reached the secondary level of school easily understood the importance of FP comparatively to illiterate who may not realize the benefits of FP.

V.1.6. Number of living children

Our findings were the following: 247 MCS (61.8%) had 1 or 2 living children, 122 MCS (30.5%) had 3 or 4 children and 21 MCS had 5 children or above.

Shahid U (1993, Bangladesh) (18) find similar results, that the rate of contraception use was increased among women who had 1-2 children.

V.1.7. Frequency of MCS per contraceptive choice

The study found that the most chosen contraceptive method was Depo-Provera (48.25 %).followed by Norplant (20.75); IUD (16.5); Pills (11.75); others (2.75)

The same findings were observed by Rwanda MOH in 2011, that Depo-Provera was the contraceptive method mostly used (64%); (2012, Rwanda MOH) (4)

Fasil H. (2006 Addis abeba) (6).Found also that the majority of women (79.3%) have been practicing injectable contraceptives.

UWIRAGIYE.C. (2013, Rwanda) (2) in his survey conducted at Burera had also similar results.

V.1.8. Source of information on modern contraceptive methods

We found that 189 MCS (47.25%) were informed on modern contraceptive methods by their friends and family members.

JC konje (2004, Nigeria) (5) in a similar study realized that the mass media was an important source of information for most of the women.

Fasil.H. (2006 Addis abeba) (6), however, had found in his study that most of women users of FP, got the information from FP services

It's is possible that most of our MCS had friends or family members who were using or have already used modern contraceptives methods

V.1.9. Factors influencing the modern contraceptive method choice

Among the 400 MCS, 174 MCS (43%) reported that their choices were influenced by the advices from friends and relatives.

These results showed that the majority of our MCS believed in their friends and relatives

JC konje (2004, Nigeria) (5) found similar observations that advices from friends and family members was with the information from media had the strongest influence on modern contraceptive choice in his study

The WHO, (16) in contraceptive method mix, supports this, by relating that: "A couple's method choice may also be influenced by the strength of information received from friends and relatives"

V.2. Chi-square tests

V.2.1. Age groups vs. Contraceptive choice

The study found: The calculated p value was 0.01, we rejected the null hypothesis: concluding that "there is a significant association between the age of the MCS and the contraceptive method choice''

This was supported by the World Health Organization (1999, Geneva). (16) Which reported from a similar study that, "the client characteristics, such as age and number and sex of living children, have a positive influence on couple's method choice. "

V.2.2. Marital status vs. Contraceptive choice

We have found that the calculated p value was 0.08, we accepted the null hypothesis: ''There is no significant association between the marital status and the contraceptive choice''.

The same finding was also observed by Rasheed A et al, (2010, Islamic). (8) Who showed that the choice and use of the modern family planning method among women was not significantly associated to the marital status

V.2.3. Occupation vs. Contraceptive choice

The calculated p value was 0.31; we accepted the null hypothesis stating that there is no significant association between the occupation and the contraceptive choice;

UWIRAGIYE. C., (2013.Rwanda) (2) and F. H. Georgis (2006, Ethiopia) (17) had similar findings in their study; they had found that the occupation of the clients did not influenced significantly their contraceptive choices.

V.2.4. Religion vs. Contraceptive choice

We found that the calculated p value was 0.54; we accepted the null hypothesis "there is no significant association between the religion and the contraceptive choice."

Olaitan (2011, Nigeria). (9) And F. H. Georgis (2006, Ethiopia) (17) had similar findings to our study; they have found no significant influence of the religion on the couples' modern contraceptive choices.

V.2.5. Education vs. Contraceptive choice

The study found that the calculated p value was 0.035; by rejecting the null hypothesis we concluded that there is an association between the education level and the contraceptive choice.

Olaitan (2011, Nigeria). (9) and Ketenge Charles et al (2003, Uganda) (11) in their survey had found similar results; they have observed that the level of education had significant influence on the couples' contraceptive choices.

V.2.6. Number of living children vs. Contraceptive choice

We have observed that the calculated p value was 0.002, we concluded that ''There is significant association between the number of living children and the contraceptive choice''

The (WHO, 1999). (16)In his booklet on contraceptive method mix; supported this by reporting that the client characteristics, such as the number and sex of living children, may significantly influences a couple's method choice.

These results are also similar to those of Some fun D et al (2012, Malawi and Zambia). (20), where they have found also that the number of living child is significantly linked to contraceptive choice.

V.CONCLUSION

As observed in our study:

- The advices from friends and relatives had the strongest influence on the choice of modern contraceptive methods.
- The counseling by health professionals and the marital opinion had a weak influence on the choice of modern contraception methods among women
- ✓ We found that the age of MCS, the level of education and the number of living children had significant influence on the contraceptive choice.
- ✓ We also found that the marital status, the occupation and religion of the MCS had no significant influence on the choice of modern contraceptive methods.

VI. RECOMMENDATIONS

Based on the findings of this study, we recommend the following:

1. Action should be taken to improve mass media messages through the radio and increasing the awareness about modern contraceptive methods.
2. To conduct a similar research to solve problems related to contraceptive choice and use the country.
3. All reproductive age women, should be encouraged to visit the family planning service providers so as to get really information on various family planning

VII. STUDY LIMITATION

- Financial issues;
- Illiterates difficulty of understanding questions;
- Some questionnaires not well filled by MCS(some missing data)

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IX. APPENDICES

IX.1. Consent to participate

Study title: Factors determining the choice of modern contraceptive method among women in Kigali city.

I have read (or someone has read for me) the information in this study for which
I understand the purpose and procedures;
I was given sufficient time to think about it and I had the opportunity to ask questions and I received satisfactory answers; that why I give permission to the use and disclosure of my de-identified information collected for the research purposes described in this form.
I understand that by signing this document, I do not waive any of my legal rights and I will be given a copy of this consent form

I have agreed to participate in this study:

Participant name: signature: Date:

Name of person obtaining consent: signature: Date

IX.2. Questionnaire

A Questionnaire for assessing factors determining the choice of modern contraceptive method among reproductive age group of women in Kigali city.

Introduction,

My name is Dr NSENGA BAKINAHE; I am working on factors shaping the choice of modern contraceptive method among reproductive age women in Kigali city: A case study of Muhima district hospital and Gitega Health center.

I would like to ask you some easy questions; your name will not be written in this format and will never be used in connection with any of the information you are going to tell me.

Your honest answers to these questions will help us identifying the determinant factors of modern contraceptive choice in order to improve the family Planning services in the future.

NB. Complete with x in the appropriate case

SECTION A BIODATA AND GENERAL INFORMATION

(1) Age: (4) Level of education:

(2)Marital status:

1. Married	
2.Not Married	
3.Divorced/Separated 4.Widowed	

1. Illiterate	
2. Primary	
3. Secondary	
4. University	

(3) Occupation:

1.Employee	
2.Unemployed	
3. Student	

(5)What is your religion?

1. Muslim	
2. Orthodox	
3. Protestant	
4. Catholic	
5. Other, specify	

(6)Parity

a. Number of Living Children: _____

b. Number of spontaneous abortions: _____

c. how many children do you plan to have : _____

SECTION B TEST OF KNOWLEDGE

Which of the following factors do you think can influence your choice of Modern contraceptive method?

	Yes	no	Don't know
1. Religious belief?			
2. Counseling by health professionals?			
3. Pressure from male partner?			
4. Number of living children?			
5. Advice/friends and family members?			
6. Education level?			
7. Minimum sides effects?			
8. Marital status?			
9. Age?			
10. Access to or availability of the contraceptives at your nearest hospital /health center?			

SECTION C: TEST OF PRACTICE/BEHAVIOUR

1. What contraceptive method can you choose and use? _____
2. What motivate you to choose it? _____
3. What is the source of knowledge/ (or how did you know about) of that method? ____
4. can you enumerate another/others types of contraceptives methods that you know _____