

UNIVERSITY OF RWANDA

College of Arts and Social Sciences

Post Graduate Programme

*Vasectomy Acceptability within
Rwandan Family Planning Policy*

BY

MUKANSORO Odette

Registration Number: **PG112001272**

Under the guidance and supervision of **Dr Simeon Wiehler**

A Thesis Submitted to

University of Rwanda, College of Arts and Social Sciences in Partial Fulfilment of the
requirements for the award of Master's Degree in Development Studies

Kigali, June 2014

DECLARATION

“I, MUKANSORO Odette, do declare that this dissertation is my own work. I have to the best of my knowledge acknowledged all authors or sources from where I got information. I further declare that this work has not been submitted to any university or institution for the award of a degree or any of its equivalents.

Signed.....Date.....

APPROVAL

This is to acknowledge that this dissertation has been submitted with my approval.

Supervisor's name: **Dr Simeon Wiehler**

Signed.....Date.....

DEDICATION

This work is dedicated to my entire family, friends and those who invest their efforts in family planning as a development strategy.

ACKNOWLEDGEMENT

The accomplishment of this would not be possible if there were not various persons to whom I owe a special recognition.

I acknowledge the contribution of my supervisor **Dr Simeon Wiehler** whose guidance has been of incommensurable importance.

In the same framework, may I forward special thanks to various families, medical doctors as well as administrative authorities who enabled me to get data and therefore made the research possible.

Moreover, I recognize today and in the future the contribution of my family and friends whose names cannot be all mentioned here.

I recognize the role of the University of Rwanda as institution and all staff members for having shaped me to make me a Master's Degree Holder. Their portrait shall remain kept at the bottom of my heart.

For any other person not mentioned here who has contributed in a way or another to my studies and research, I will recognize that forever.

MUKANSORO Odette

GLOSSARY

AIDS	: Acquired immunodeficiency syndrome
ARBEF	: <i>Association Rwandaise pour le Bien-Être Familial</i> (Rwandese Association for family well fare)
BBC	: British Broadcasting Corporation
CCB I	: Civil Code Book One (Rwandan act of parliament)
CPR	: Contraceptive Prevalence Rate
DHS	: Demographic and Health Surveys
EDPRS	: Economic Development and Poverty Reduction Strategy.
FDA	: Food and Drug Administration
FHI	: Family Health International
FP	: Family Planning
GoR	: Government of Rwanda
HIV	: Human immunodeficiency virus infection
IEC	: Information Education Communication
ILO	: International Labour Organization
IUD	: Intrauterine Device
LAM	: Lactational Amenorrhea Method
NGO	: Non-Governmental Organization
MDGs	: Millennium Development Goals
MIGEPROF	: Ministry of Gender and Family Promotion
MINECOFIN	: Ministry of Finance of Economic Development
MINISANTE	: <i>Ministère de la Santé</i> (Ministry of Health)
MoH	: Ministry of Health
NFS	: National Fertility Survey
NISR	: National Institute of Statistics of Rwanda
ONAPO	: <i>Office National de la Population</i> (National Population Office)
PBS	: Public broadcasting services
RPF	: Rwanda Patriotic Front

STD : Sexual transmitted diseases
STIs : Sexually Transmitted Infections
TFR : Total Fertility Rate
UNFPA : United Nations Population Fund
USAID : United States Agency for International Development
WHO : World Health Organization

LIST OF TABLES

Table 1: category and number of respondents	40
Table 2: Age of respondents	44
Table 3: Residence of sterilized and non-sterilized families	46
Table 4: Respondents' level of education.....	48
Table 5: Respondents' civil status	49
Table 6: Size of respondents' families.....	50
Table 7: Non sterilized families' used type of birth method	51
Table 8: Source of information on vasectomy for sterilized families.....	53
Table 9: Source of information on vasectomy for non sterilized families.....	54
Table 10: Factors leading to vasectomy acceptability	54
Table 11: Future willingness to undergo a vasectomy by non sterilized families	63

TABLE OF CONTENTS

DECLARATION	i
APPROVAL	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
GLOSSARY	v
LIST OF TABLES	vii
TABLE OF CONTENTS.....	viii
EXECUTIVE SUMMARY	xiii
Chapter I. GENERAL INTRODUCTION.....	1
I.1 Background to the Study	1
I.2 Problem statement	5
I.3 Objectives of the study	6
I.3.1 Overall objective.....	6
I.3.2 Specific objectives	7
I.4 Research questions	7
I.4.1 Main research question.....	7
I.4.2 Sub research questions.....	7
I.5 Significance of the study	8
I.6 Scope of the study.....	8
Chapter II. LITERATURE REVIEW	9
II.1 Definition of key terms and concepts.....	9
II.1.1 Pregnancy	9
II.1.2 Birth control	9
II.1.3 Family planning.....	10
II.1.4 Fertility	10
II.1.5 Contraception	11
II.1.6 Sterilization	11

II.2 Birth control overview	11
II.2.1 Birth control historical background.....	11
II.2.1.1 Birth control and demographic transition.....	12
II.2.1.2 Introduction of official birth control methods.....	13
II.2.2 Birth control socio-economic factors	14
II.2.2.1 Fertility decline as a result of industrialization and technological advancements	15
II.2.2.2 Birth control as an investment in development.....	16
II.2.2.3 Political will to ally birth control to the socio-economic development	19
II.2.3 Birth control in Rwanda	20
II.2.3.1 Brief historical background of birth control in Rwanda	20
II.2.3.2 Small family campaign in Rwanda	22
II.2.3.3 Most frequent birth control methods in Rwanda.....	24
II.2.3.3.1 Hormonal methods	24
II.2.3.3.1.1 Oral Contraceptives – the pill.....	24
II.2.3.3.1.2 Shot/Injection	24
II.2.3.3.2 Implantable Devices	24
II.2.3.3.2.1 Implantable Rods.....	25
II.2.3.3.2.2 Intrauterine Devices (IUD).....	25
II.2.3.3.3 Barrier Methods.....	25
II.2.3.3.3.1 Female Condom	25
II.2.3.3.3.2 Male Condom.....	26
II.2.3.3.4 Natural methods	26
II.2.3.3.4.1 <i>Coitus interruptus</i>	26
II.2.3.3.4.2 Douching shortly after sex	26
II.2.3.3.4.3 Lactational Amenorrhea Method (Breastfeeding).....	27
II.2.3.3.4.4 Continuous Abstinence	27
II.2.3.3.4.5 Rhythm method.....	28
II.2.3.3.5 Emergency contraception.....	28

II.2.3.3.6 Permanent birth control methods	28
II.2.3.3.6.1 Female surgical sterilization, tubal sterilization.....	28
II.2.3.3.6.2 Male surgical Sterilization, vasectomy	29
II.2.3.4 Vasectomy compared to other birth control methods	29
II.2.3.4.1 Vasectomy as the most successful method	30
II.2.3.4.2 Vasectomy effectiveness and fewer side effects	30
II.2.3.4.3 Reasons to choose an alternative to vasectomy	31
II.2.3.4.4 Vasectomy and socio-economic prospects in Rwanda	31
II.3 Factors surrounding vasectomy acceptability	32
II.3.1 Barriers to choosing vasectomy over other methods	33
II.3.1.1 Lack of information and prevalence of myths and rumours	33
II.3.1.2 Lack of consistent service availability	34
II.3.1.3 Vasectomy irreversibility and fear of surgery.....	34
II.3.1.4 Trust	35
II.3.2 Facilitating factors to choosing vasectomy over other methods	35
II.3.2.1 Information education communication	35
II.3.2.2 Financial hardship	36
II.3.2.3 Spousal influence	36
II.3.2.4 Dissatisfaction with previously used methods	36
II.3.2.5 Sterilized men as role models.....	36
Chapter III. RESEARCH METHODOLOGY	38
III.0 Introduction.....	38
III.1. Research design	38
III.2. Participants.....	38
III.2.1 Research target population.....	39
III.2.2 Research sample.....	39
III.3 Primary data collection methods.....	40
III.4 Data analysis and presentation.....	41
III.5 Validity and reliability	42
III.6 Ethical considerations	42

Chapter IV. DATA PRESENTATION, INTERPRETATION AND DISCUSSION.....	43
IV.0 Introduction.....	43
IV.1 Identification of respondents	43
IV.1.1 Personal and residential identification.....	43
IV.1.1.1 Sex of respondents	44
IV.1.1.2 Age of respondents	44
IV.1.1.3 Residence of respondents	45
IV.1.1.4 Respondents' level of education.....	47
IV.1.2 Identification within the family	49
IV.1.2.1 Civil status of respondents.....	49
IV.1.2.2 Size of the family	50
IV.1.2.3 Family planning methods and birth spacing.....	51
IV.2 Respondents' awareness and acceptability of vasectomy	52
IV.2.1 Vasectomy awareness	52
IV.2.2 Vasectomy acceptability	54
IV.2.2.1 Factors leading to vasectomy acceptability	54
IV.2.2.2 Final decision to proceed to vasectomy.....	56
IV.2.2.3 Obstacles to vasectomy acceptability	58
IV.2.3 Vasectomy implementation	59
IV.3 Respondents' views on vasectomy effects	60
IV.3.1 Vasectomy side effects (health).....	60
IV.3.1.1 Respondents' views on vasectomy side effects: myths and truths	60
IV.3.1.1.1 Awareness on vasectomy truths.....	60
IV.3.1.1.2 Vasectomy myths.....	62
IV.3.1.2 Future vasectomy acceptability	63
IV.3.2 Vasectomy contribution to the socio-economic development.....	66
IV.3.2.1 Recorded results and achieved targets because of vasectomy.....	66
IV.3.2.1.1 Family, education and health related achievements	66
IV.3.2.1.2 Economic performance	67
IV.3.2.1.3 Personal confidence and promiscuous issues	68

IV.3.2.2 Further socio-economic targets.....	69
IV.3.3 Respondents' advice on vasectomy	69
IV.3.3.1 Respondents advice to the Government in general.....	69
IV.3.3.2 Respondents advice to the health sector	70
IV.3.3.3 Respondents advice to the married couples in general.....	70
IV.3.3.4 Respondents advice to women in general and wives in particular	71
IV.3.3.5 Respondents advice to men in particular	72
Chapter V. FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	73
V.1 Summary of findings.....	73
V.2 Conclusions	76
V.3 Recommendations	77
V.3.1 To the Ministry of Health.....	77
V.3.2 To sterilized families.....	78
V.3.3 To non sterilized men's wives	78
V.3.4 To non sterilized men.....	79
V.3.5 Further Research	79
REFERENCES	81
APPENDICES	89
Map of the research areas	90
Pictures of the research areas	91
Questionnaires.....	92

EXECUTIVE SUMMARY

Vasectomy is a surgical procedure performed on males in which the vas deferens (tubes that carry sperm from the testicles to the seminal vesicles) are cut, tied, cauterized (burned or seared) or otherwise interrupted. The semen no longer contains sperm after the tubes are cut, so conception cannot occur. The testicles continue to produce sperm, but they die and are absorbed by the body. The purpose of this operation is to provide reliable contraception. International researches indicate that the level of vasectomy effectiveness is 99.6% which makes it the most reliable method of contraception.

Contraception has many purposes which include overpopulation reduction, family planning with an overall objective of a sustainable economic development. In relation to family planning, contraception is proven to be the most efficient way for avoiding undesired pregnancy. It is therefore clear that in the case of an overpopulated nation, contraception should be encouraged to be used by sexually active female who do not desire to become pregnant or by teenagers who are not ready to become parents or parents who want to limit birth using various birth methods which include vasectomy, a most reliable male method.

As confirmed by the 2014 Thematic Report on the 2012 Fourth Population and Housing Census, compared to neighbouring countries like Burundi (333), Uganda (173) or Kenya (73), Rwanda is the highest densely populated county in the region with 415 inhabitants per square kilometre (sq. km), whereas it was only 183 persons per sq. km in 1978, and 321 in 2002. Nevertheless the Rwandan overpopulation, the same report showed that the annual population growth for Rwanda has been slowing from 3.2% in 2002 to 2.6% in 2011, though it remains among the highest in Africa. The decline in the population growth rate indicates the success from the sustained campaign on responsible family planning, the increased uptake of contraceptive methods for both men and women, and improved living conditions including universal access to health and basic education.

Putting an emphasis to the family planning, in the Rwandan birth control history, it was observed that women have been the only involved in adhering to modern methods which are sometimes associated with a good number of side effects and therefore preventing them from actively participating in the development of their households and of the country. With the introduction of vasectomy as male birth control method, women found time to work and thus contribute to the same development.

However, being strange in the Rwandan community and being exercised on men, rumours started circulating in the society that vasectomy is subject to various negative impacts not only on men's physiological and biological status but also family relationship and socio-economic status, which might impact on the method acceptability by more men.

Allying birth control to the development of the country, the researcher undertook a research on this vasectomy conception and acceptability in Rwanda. The research had as overall objective to assess the level of awareness and acceptability of vasectomy as a modern, irreversible and male focused birth control method meant to enable the socio-economic development. The research targeted the reproductive population of Rwanda and was sampled from the Kigali City, Gasabo District, which is a hybrid district (semi rural / semi urban) to represent attitudes, level of education and socio-economic life of the Rwandan reproductive population. Considering that the majority of the Rwandan population live in the rural part of the country, the research was also extended to Rulindo District, Bushoki Sector where Tare Health Centre has become a vasectomy centre of reference, so as to include views and attitudes of the rural population vis-à-vis male sterilization.

The study sampled one hundred (100) key respondents who included thirty (30) sterilized men, their wives and thirty (30) other respondents from non sterilized families. In addition to these ninety (90) respondents, the researcher interviewed two (2) medical doctors and six (6) nurses, with expertise in vasectomy issues, who helped to harmonize information got from other respondents, interviews and observations. The research also got information from two (2) local administrative authorities who have social affairs in their daily attributions and

who administratively contributed to the acceptability of vasectomy in their occupational territory.

Findings showed that the Rwandan reproductive community is sufficiently aware of vasectomy and accept it as the most reliable and effective birth method meant to contribute to the socio-economic development of the Rwandan households and the community as a whole. However, the research found that there are still persisting problems hindering the wider acceptability of vasectomy which include myths that sterilization corresponds to castration, that there might be some vasectomy operational mistakes which can lead to reproduction and that vasectomy is against the will of God for people to multiply in the whole world and that those who accept it may face the sanctions of God.

Therefore, the research recommended that vasectomy is a birth control method to opt for and even to be privileged over all other methods, especially for families which do not need more children in line with the national family size preferences and strategies. Most importantly, vasectomy would be selected because it assures a better life and smooth running of familial and social life, and more valuably, the economic development of households and of the country, as a whole.

Chapter I. GENERAL INTRODUCTION

Before reviewing the existing vasectomy literature, presenting the methodology chosen for this research and then analyzing and discussing vasectomy acceptability data in the context of the Rwandan reality, the study discusses basic elements regarding vasectomy and explores reasons to undertake such kind of research. That is the rationale of the present chapter which is composed of the background to the study, problem statement, objectives, research questions, significance and scope of the study.

I.1 Background to the Study

In regard to the New Perspectives on Population Growth and Economic Development, more children would actually mean lower family savings, less labour supplied by women, and less parental investment in the human capital of each child. But again, parents might work harder if they had more children, older children could care for younger, freeing their mother's time, and more child labour might free later born siblings to go to school (Lee, 2009). This is not only a national concern, but also a global one with global ecological implications. More importantly, the most significant burden is visible among the developing nations where poverty is combined with uncontrolled births which lead in turn to overpopulation (Kishori Mahat, 2010).

To address the population growth issue in order to mitigate its impacts on not only the economic development but also the socio-ecological image of the whole world, birth controls methods were initiated and even compulsorily legalized in some countries, China (Huiting, 2002) topping the policy. Rwanda, the Africa's most densely populated country (NISR, 2012), one of Sub-Sahara African Countries where the population growth is higher than the economic development (UNFPA, 2011), adopted birth control policies, since 1981 with the creation of the National Population Office which was commonly known as ONAPO, Office National de la Population (Muhoza, 2013).

From 1981, a year considered as a reference for the introduction of birth control in Rwanda, various methods, both traditional and modern, have been under use. Those are like Periodic rhythm, withdrawal, injections, pills, implants, Intrauterine Device (IUD), Lactational Amenorrhea Method (LAM), female sterilization, male and female condoms, and recently male sterilization known as vasectomy (Nsengiyumva, 2013).

Under the Rwanda birth control methods history, women were much more concerned than men, more importantly in regard to modern methods. Even various mobilization sessions were targeting women. The female sterilization was famous and it could not be easily understandable that men would also be subject to sterilization, until this method is widely taught and encouraged, especially since 2008 together with intense training of medical doctors and nurses meant to carry out vasectomy operations. Being strange in the Rwandan community and being exercised on men, rumours started circulating in the society that vasectomy is subject to various negative impacts not only on men's physiological and biological status but also family relationship and socio-economic status; a situation that qualified medical doctors considers as misconception (Nsengiyumva, 2013).

Vasectomy is a simple operation on a man to prevent him from impregnating a woman. It involves minor surgical operation where the vas deferens (the tubes that carry sperm) are cut and sealed using thermal coagulation. It is free of side effects compared to other methods. It is reliable approximately to 100% where there should be no fear to impregnate a woman. It is cost effective and does not imply lots of further operations and treatments as for other methods (Sokal, 2009).

Vasectomy operation trips start by preparing the beneficiary, before operations themselves and post operation eventual expectations and required behaviour. There are no special things needed to be done before being operated. On the day of the operation, the beneficiary brings an adult scrotal support (not a "jock strap") to help him keep as comfortable as possible following the procedure. Also, the beneficiary brings someone with him who can drive him home, just a companion (Peery, 1999). The physician will then assess the patient's general health in order to identify any potential problems that could occur. The doctor will thereafter

explain possible risks and side effects. In some practices, the patient is asked to sign a consent form which indicates that he understands the information he has received, and gives the doctor permission to perform the operation (Saunders, 2008).

However, if the patient is anxious, he must tell this to the physician for further preparations. In this case, the physician can give like drugs to relax, if the beneficiary wishes so. Otherwise, nothing special is supposed to be done before the operation, when of course the beneficiary has definitely chosen vasectomy to control births (Peery, 1999).

A vasectomy is usually done in the doctor's office or in an outpatient surgery centre. The operation takes about half an hour. The patient will be awake during the procedure. First, a small amount of genital hair will be removed by shaving or clipping, to help prevent infection. The doctor will give a local anaesthetic to numb the *scrotum* (the sac of skin that holds the testicles), and drugs to relax the patient, if necessary (Ibid).

After the patient is numb, the doctor will cut two small (3/4 inch) openings on each side of the patient's scrotum and pull out part of each sperm-carrying tube. The patient may feel some tugging and pulling. A very small section of each sperm-carrying tube is removed. The ends of the tubes where the section has been taken out will be sealed by stitching them shut. The doctor will close the two openings in the patient's scrotum with stitches. After three to 10 days, the stitches will disappear by themselves. The tissue removed is sent to a pathologist, who checks to be sure that it is pieces of the tubes (Ibid).

Right after the operation, the beneficiary would expect that the doctor may ask him to lie down for a couple of hours with an ice pack placed on his scrotum. The beneficiary may have some bruising in the area of the surgery. The bruises should slowly lighten and be gone in about two weeks. There are no major restrictions besides not doing any strenuous activity for 3 to 5 days. The beneficiary will feel more comfortable if he wears the scrotal support day and night for 10 days. His doctor will want him to return for check-ups. He should just feel back to normal within a couple of weeks (Weissman, 2014).

Moreover, the doctor must inform the patient that sterility does not occur immediately after the procedure is finished and that men must use other methods of contraception until two consecutive semen analyses confirm that there are no sperm present in the semen. This will take four to six weeks or 15-20 ejaculations to clear all of the sperm from the tubes. "No scalpel" vasectomies are gaining popularity. Instead of an incision, a small puncture is made into the scrotum. The vas deferens are cut and sealed in a manner similar to that described above. No stitches are necessary and the patient has less pain. Other advantages include less damage to the tissues, less bleeding, less risk of infection, and less discomfort after the procedure. In some, cases vasectomies may be reversed. However, this procedure should be considered permanent as there is no guarantee of successful reversal (Saunders, 2008).

Vasectomy beneficiaries are advised, for the first eight hours after the operation, to rest with their legs elevated or lie on their back, to raise their testicles a little by putting a rolled-up washcloth under their scrotum, to place an ice pack rolled in another towel on top of their scrotum, to keep adult scrotal support on and place the ice pack outside of it, to keep the area dry for 24 hours to use an ice pack when resting (Peery, 1999). According to similar other practices, following the surgery, ice packs are often applied to scrotum to decrease pain and swelling. A dressing (or athletic supporter) which supports the scrotum can also reduce pain. Mild over-the-counter pain medication such as aspirin or acetaminophen (Tylenol) should be able to control any discomfort. Activities may be restricted for one or two days and sexual intercourse for three to four days (Saunders, 2008).

Vasectomy beneficiaries are also advised to avoid strenuous activity, including heavy lifting, for a week and to wear the scrotal support day and night for 10 days in order to feel more comfortable. More importantly, they are advised to avoid having sex or ejaculating for the first week after the operation and to use another type of birth control until their semen is clear of sperm, a situation which would be confirmed by a physician (Peery, 1999).

There are very few risks associated with vasectomy other than infection, bruising, *epididymitis* (inflammation of the tube that carries the sperm from the testicle to the penis), and sperm *granulomas* (collection of fluid that leaks from a poorly sealed or tied vas

deferens). These are easily treated if they do occur. Patients do not experience difficulty achieving an erection, maintaining an erection, or ejaculating. There is no decrease in the production of the male hormone (testosterone), and sex drive and ability are not altered. In any case, vasectomy remains safer and less expensive than tubal ligation or sterilization of a female by cutting the fallopian tube to prevent conception (Saunders, 2008).

I.2 Problem statement

A vasectomy is an operation that makes a man permanently sterile, or unable to get a woman pregnant. Sperm are made in the *testicles*. The sperm from each testicle normally travel through a tube, called the *vas deferens*, and mix with *seminal fluid*, which is made by the *seminal vesicles*, and *prostate fluid*, which is made by the *prostate gland*. The sperm, seminal fluid and prostate fluid make up the *semen*. During ejaculation (“coming”), the semen goes through the penis and outside the body. A vasectomy involves cutting the sperm-carrying tubes, or vas deferens, on each side so that sperm can no longer get into the semen (Peery, 1999).

Defined alike, medical doctors affirm that vasectomy is the simplest, safest, most reliable, most cost effective and a method exposed to less surgery side effects compared to other birth control methods (Nsengiyumva, 2013).

However, this is not the case for the rest of the community where rumours have been spreading even in media insisting on vasectomy negative impacts (Holliday et al, 2011) and community’s resistance in Rwanda (BBC, Feb. 2011), in spite of being the first country in Africa to use the latest birth control method – vasectomy, the best solution to the birth control issues which would be privileged over other methods (Kanimba, Aug. 2013).

According to the Rwandan laws and policies, birth control is not mandatory. In other words, no citizen is statutorily obliged to limit births. Furthermore, this means that even in case a given family wants to limit birth, no method is imposed. Family members have freedom to choose, after of course being instructed by health workers who also raise the awareness on

positive impacts and side effects of each method and thereafter, the family members choose in accordance to their appreciation.

When it comes to vasectomy, various factors tend to prevent couples from choosing it. This may include the reluctance, resistance and unwillingness of men to take responsibility, and thus making birth controls women focused. This will also include fear to be subjected to rumoured side effects like becoming impotent, failing to have sex or enjoying it as usual (Saoji, 2013).

Furthermore, the most threatening issue would be the fact that vasectomy is irreversible and therefore cannot allow men to be restored to their previous reproduction status, in case they are in need of more children. This is a problem which should not be neglected and therefore which need a scientific and convincing solution.

All those misconception related issues may impact on the acceptability of vasectomy not only by men but also by women, whereas the acceptability level would be increased for a stable and safe birth control. Thus, such situation deserves a rigorous research to explore real vasectomy acceptability challenges and find solutions to them.

I.3 Objectives of the study

The study has overall objective and specific objectives.

I.3.1 Overall objective

The research has an overall objective to assess the level of awareness and acceptability of vasectomy as a modern, irreversible and male focused birth control method meant to enable the socio-economic development of the Rwandan households and the country as a whole.

I.3.2 Specific objectives

The research specific objectives are as follows:

1. To explore real vasectomy acceptability challenges and to make suggestions to address them, at the end of the study;
2. To illustrate the positive contribution of vasectomy to the Rwandan birth control system;
3. To compare benefits and negative impacts of vasectomy and help the Rwandan community to choose a better alternative for their socio-economic development.

I.4 Research questions

The research is carried out under guidance of main and sub research questions.

I.4.1 Main research question

The research main question is set as follows: “Is the Rwandan reproductive community sufficiently aware of vasectomy and accepting it as the most reliable and effective birth method meant to contribute to the socio-economic development of the Rwandan households and the community as a whole?”

I.4.2 Sub research questions

In addition to the main question, the research has the following sub questions:

1. Which are the real challenges of vasectomy acceptability and which are solutions to them?
2. Which are the positive contributions of vasectomy to the Rwandan birth control system?

3. Based on vasectomy benefits and negative impacts, is it better to leave it or to select it for the effective and efficient socio-economic development of Rwandan households and the community in general?

I.5 Significance of the study

The research mainly on vasectomy acceptability is highly significant due to the importance it is associated with for the researcher herself, the community, the academia as well as the research industry.

For a researcher at master's level and majoring in development studies, researching on vasectomy acceptability is a good contribution to the socio-economic development of the country through the application of the most reliable and effective birth control method, in order to balance the population growth and their economic growth. The research and academic community will also get benefit from this research which will in turn enrich the national literature of birth control in general and vasectomy in particular.

I.6 Scope of the study

So as to effectively tackle these objectives, the research focused on a limited subject matter as well as timeframe, geographical location and target group.

It is in this framework that the research did not detail all birth control methods, even though it gets inspiration from them, but rather focuses mainly on vasectomy acceptability. The research also has as target the group of sterilized men and their families as well as those families who have not yet been subject to vasectomy, involved medical servants included. The research also covers the period from 2008 to 2013, that is, when more efforts started being invested in vasectomy. Finally, the research targets the population of the Kigali City neighbouring both urban and rural health facilities which provide vasectomy services in order to assess adequately the basis of vasectomy acceptability, as well as the productive population of Rulindo District, Bushoki Sector and who benefit from health services at Tare Health Centre.

Chapter II. LITERATURE REVIEW

Before studying in depth the vasectomy acceptability within Rwandan family planning policy, the literature review chapter helps to understand well through mainly its location among other birth control methods, assessment and presentation of existing literature on vasectomy acceptability. That is why, under this chapter, the study covers the definition of key terms and concepts, overview of birth control methods and factors surrounding the acceptability of vasectomy as one among other birth control methods.

II.1 Definition of key terms and concepts

Key terms and concepts that deserve to be defined under this section are pregnancy, birth control, family planning, fertility, contraception and sterilization.

II.1.1 Pregnancy

Pregnancy is the period from conception to birth. After the egg is fertilized by a sperm and then implanted in the lining of the uterus, it develops into the placenta and embryo, and later into a foetus. Pregnancy usually lasts 40 weeks, beginning from the first day of the woman's last menstrual period, and is divided into three trimesters, each lasting three months (Saunders, 2007).

The first sign of pregnancy is usually a missed menstrual period, although some women bleed in the beginning. A woman's breasts swell and may become tender as the mammary glands prepare for eventual breastfeeding. Nipples begin to enlarge and the veins over the surface of the breasts become more noticeable (Ibid).

II.1.2 Birth control

Birth control stands for voluntary limitation or control of the number of children conceived, especially by planned use of contraceptive techniques which assure not only planned for

number of children but also pregnancies spacing. It is also known as family planning. Birth control is practised under various methods. However, it is said that there is no "best" method of birth control, because each has its pros and cons. All women and men can have control over when, and if, they become parents and it is up to them to make choices about birth control, which is not easy at all. That is why, before getting started, couples must learn about birth control methods that they can use to prevent pregnancy. Most importantly, they can also talk with their doctor about their preferences (US Department of Health and Human Services, 2014).

II.1.3 Family planning

Family planning is the concept or a program of limiting the size of families through the spacing or prevention of pregnancies, especially for economic reasons. In other words, family planning is the practice of controlling the number of children one has and the intervals between their births, particularly by means of contraception or voluntary sterilization (WHO, 2013).

Having the same meaning, family planning and birth control are used in an interchangeable manner, the latter being used the most.

II.1.4 Fertility

Fertility refers to the ability to produce off-spring, to have children. Even though fertility is much more known to concern women, men are also subject to fertility. The fertility rate is the ratio of live births in an area to the population of that area expressed per 1,000 populations per year (White, 2006).

Fertility is opposed to infertility, a term used to describe the inability of a woman or man to conceive a child or the inability of a woman to carry a pregnancy to term. Infertility is defined clinically in women and men who cannot achieve pregnancy after 1 year of having unprotected intercourse. In women older than age 35, the time frame is reduced to 6 months to indicate that earlier evaluation in this age group is appropriate, because fertility declines as

a woman gets older. Many different medical conditions and other factors can contribute to fertility problems, and an individual case may have a single cause, several causes, or in some cases, no identifiable cause (US Department of Health and Human Services, 2014).

II.1.5 Contraception

Contraception is a way to prevent pregnancy. Although different methods work in different ways, contraception generally prevents sperm from reaching and fertilising an egg which is ready for fertilization and then for the pregnancy to start. The terminology “contraceptive” is often used as synonymous to “contraception” and, in various works, they are used interchangeably. Note that, with technological advancements, contraception is more and more being adhered to with fewer side effects (Burke et al., 2012).

II.1.6 Sterilization

Sterilization is a permanent method of birth control. There are two main types of sterilization: sterilization for women known as tubal ligation (Peery, 1999) and sterilization for men known as vasectomy.

II.2 Birth control overview

Vasectomy does not constitute an island; it is rather surrounded by other methods of birth control. Even though they are different in operations, effects and effectiveness, they are all methods meant to limit birth. Under this section, the study treats the history of the birth control at issue, before reviewing the literature of socio-economic factors as major reasons leading to birth control choices or acceptability.

II.2.1 Birth control historical background

Birth control constitutes one of major phases of demographic transition, reason why, under this sub-section, both notions are reviewed together, before putting an emphasis on the introduction of official birth control methods.

II.2.1.1 Birth control and demographic transition

Researchers found that the birth control is associated with the demographic transition. The transition began around 1800 with declining mortality in Europe. It has now spread to all parts of the world and is projected to be completed by 2100. This global demographic transition has brought momentous changes, reshaping the economic and demographic life cycles of individuals and restructuring populations. Before the start of the demographic transition, life was short, births were many, growth was slow and the population was young. During the transition, first mortality and then fertility declined, causing population growth rates first to accelerate and then to slow again, moving toward low fertility, long life and an old population (Lee, 2003).

This global demographic transition has brought momentous changes, reshaping the economic and demographic life cycles of individuals and restructuring populations. Since 1800, global population size has already increased by a factor of six and by 2100 will have risen by a factor of ten. There will then be 50 times as many elderly, but only five times as many children; thus, the ratio of elders to children will have risen by a factor of ten. The length of life, which has already more than doubled, will have tripled, while births per woman will have dropped from six to two. In 1800, women spent about 70 percent of their adult years bearing and rearing young children, but that fraction has decreased in many parts of the world to only about 14 percent, due to lower fertility and longer life (ibid).

Birth control policies are meant to have been established since 1960s at the end of the first demographic transition which started in around 1800. The substantial decline in both mortality and fertility that began around 1960—referred to as the Second Demographic Transition by sociologists and demographers—has been widely acknowledged as costly to children's welfare. Key features of this transition include rising marital instability (through cohabitation and divorce), enormous upward swings in non-marital childbearing, and delays in marriage and marital childbearing. These contrast sharply with the features of the First Demographic Transition—beginning in the early 1800s—that benefitted children through

better health and physical welfare, greater familial stability, and increased access to education (Burke et al., 2012).

II.2.1.2 Introduction of official birth control methods

Prior to modern methods of birth control, women relied on withdrawal or periodic abstinence which methods were often exposed to failure. The most known methods before the introduction of modern birth control methods are condoms made from such materials as fish bladders, linen sheaths, and animal intestines that were under use even around 3000 Before Christ (B.C.), condoms made from linen cloth sheaths and soaked in a chemical solution and dried before using, this around 1500, Condoms and diaphragms made from vulcanized rubber, around 1838, Diaphragms, also known as “womb veils,” became a popular method of birth control in 1938, while the first project to create the first human birth control pill was launched in 1950 (Kirsten, 2014).

In the meantime, birth control methods were banned in some countries. For instance, in 1873, the Comstock Act was passed in the United States prohibiting advertisements, information, and distribution of birth control and allowing the postal service to confiscate birth control sold through the mail. In 1916, Margaret Sanger opens first birth control clinic in the United States. The next year she was deemed guilty of “maintaining a public nuisance” and sentenced to jail for 30 days. Once released, she re-opened her clinic and continued to persevere through more arrests and prosecutions. The struggle continued until 1938, when in a case involving Margaret Sanger, a judge lifted the federal ban on birth control, ending the Comstock era (ibid).

1960 does not only mark the beginning of the second phase of the demographic transition as seen above, but also is considered as the year of reference for the official introduction of birth control methods. This is when actually the first oral contraceptive, Enovid, was approved by the US Food and Drug Administration (FDA) as contraception. Following years were also marked by official recognition of birth control methods, especially in USA – considered as a model in birth control methods, as follows (ibid):

- 1965: The Supreme Court (in *Griswold v. Connecticut*) gave married couples the right to use birth control, ruling that it was protected in the Constitution as a “right to privacy”;
- 1968: FDA approved intrauterine devices (IUDs), bringing early versions like the Lippes Loop and Copper 7 to market;
- 1970: Feminists challenged the safety of oral contraceptives (“the Pill”) at well-publicized Congressional hearings. As a result, the formulation of the Pill was changed, and the package insert for prescription drugs came into being;
- 1972: The Supreme Court (in *Baird v. Eisenstadt*) legalized birth control for all US citizens, irrespective of marital status;
- 1980s: Pills with low doses of hormones were introduced, along with a new copper IUD;
- 1990s: Introduction of Norplant, the first contraceptive implant (1990), DepoProvera, an injectable method (1992), FC1/Reality, a female condom (1993) and Plan B, and a dedicated emergency contraceptive product (1999);
- 2000s: Rapid expansion in method availability and improvements in safety and effectiveness, including introduction of Mirena, a new levonorgestrel-releasing IUD (2000), Ortho Evra, a hormonal patch (2001), Nuvaring, a vaginal ring (2001), Essure, a method of transcervical female sterilization (2002), Implanon, a single-rod implant (2006), and FC2, an improved female condom (2009).

Today, birth control methods have multiplied and spread all over the world with technological advancements which help to assure fewer side effects and acceptability of which is dictated by socio-economic factors, among others.

II.2.2 Birth control socio-economic factors

Referring to some birth control success stories, birth control socio-economic factors would be conceived under three main angles which are the industrialization and technological advancements resulting into fertility decline, birth control as an investment in development and not always as a development effect, and finally the political will to ally birth control to the socio-economic development.

II.2.2.1 Fertility decline as a result of industrialization and technological advancements

Fertility decline originates from birth control, among other key factors and is associated with the second phase of the demographic transition and surrounding reasons, as seen above. Just a decade after the Second World War, there were approximately 3.5 billion humans living on the earth. It would be understandable that this growth was associated with a need to compensate the war's human being losses. In any case, this population growth started worrying the world, especially the industrialized one, the west. Fortunately, on the other side, a continuous population and fertility decline started being recorded because of various factors that accompanied industrialization in the west (Stockwell, 1968):

- 1) The emergence of the factory system brought about an alteration of the production system, so that manufacturing was removed from the home. This meant that a sharp separation between place of residence and place of work was created. This had a negative impact upon fertility, since it meant that women who wanted to supplement the family income and had many young children to care for in the home could do so only with difficulty.
- 2) Fertility decline was also influenced by the growth in productivity that accompanied industrialization. Increased productivity meant that less human labor was required to produce a given amount of agricultural or industrial goods.
- 3) The process of urbanization (or the shift of the population from rural to urban areas) was also a factor in fertility decline. Historically, cities have had the lowest levels of fertility. There are two reasons for this. First, children are less likely to be an economic asset in the city than on the farm, so that the urban child played only a limited role in family productivity.
- 4) Second, the extensive overcrowding and generally unsanitary living conditions characteristic of the early industrial city did not encourage people to achieve high fertility levels.
- 5) The gradual decline in the death rate also stimulated fertility decline. A lower mortality rate among infants and children meant that a larger proportion survived to adulthood. Thus it was no longer necessary for a couple to have a large number of

- children to be assured of having some survive to help them in their old age. Also, the lengthening of adult life meant that offspring who had to wait for their inheritance before they were in a position to assume responsibilities had to wait longer. Ireland is illustrative of this pattern. Obviously, by delaying marriage until later in life, the number of years for the production of children is reduced.
- 6) Industrialization also brought about a basic value change in Western society that had a depressive effect upon fertility. The *small family norm* emerged and it was largely associated with the decline of the family as a unit of economic production. Thus children were no longer viewed as an economic asset and became to be viewed as co-consumers, with their parents, of the income generated by the adults. It had become clear, in the process of industrialization, that, at a given income level, there was an inverse relationship between number of children in the family and the level of living.
 - 7) The increasing technology of birth limitation devices also of course contributed to fertility decline. The condom, the peccary, the diaphragm, the contraceptive pill, and the inter-uterine device—each have played an important role in aiding in the reduction of fertility among users desiring fertility reduction.

Thus, industrialization which leads to family isolation, decrease of human labour and increment of an unemployment, urbanization which presents a child as burden; contributed to the fertility decline as did the increasing technology of birth limitation devices, to evidence how much birth control is also influenced by the socio-economic situation of the population.

II.2.2.2 Birth control as an investment in development

It is not good always to wait for the socio-economic situation of the country to shape the population's fertility. It is also important to consider birth control as an investment in development and therefore influence the socio-economic situation of the population. Birth control should be considered as one of population policies in order to contribute to the improvement of the welfare of women, their children and families, and their communities, and possibly foster the economic development.

Though women in various parts of the world have been provided with improved birth control technologies for the past fifty years, few studies have identified the impact of these policies on the fertility and health of women and on their lifetime productivity, consumption opportunities, savings, and asset accumulation. That is why Schultz undertook a research on the same subject matter where it was found that there is a common belief that women who avoid ill-timed or unwanted births due to a population program will also be likely to invest more in each of their children's human capital, reducing poverty in the next generation. But again, it was noticed that there is little evidence of this quantity-quality trade-off based on sources of variation in fertility induced by policies that are independent of parent preferences and preconditions (Schultz, 2005).

The Schultz's paper analyzed 141 villages in Matlab, Bangladesh from 1974 to 1996, in which half the villages received from 1977 to 1996 a door-to-door outreach family planning and maternal child health program. Village and individual data confirmed a decline in fertility of about 15 percent in the program villages compared with the control villages by 1982, as others had noted, which persisted until 1996. The consequences of the program on a series of long run family welfare outcomes were then estimated in addition to fertility: women's health, earnings and household assets, use of preventive health inputs, and finally the inter-generational effects on the health and schooling of the woman's children. Within two decades many of these indicators of the welfare of women and their children improved significantly in conjunction with the program induced decline in fertility and child mortality. This suggested social returns to this reproductive health program in rural South Asia had many facets beyond fertility reduction, which did not appear to dissipate over two decades (Joshi and Schultz, 2007).

Investment in development vis-à-vis birth control also includes investment in Children's Human Capital, in terms of Schooling, Nutrition, and Health. It has been widely hypothesized by social scientists that parents who have fewer children commit more of their time and resources to each of their children. This inverse pattern between what is called the "quantity of children" and the "quality of children" might suggest that a population policy that helps parents avoid unwanted births would automatically contribute to the parents

allocating more resources to the nutrition, health, and schooling of their children. But these potential inter-generational consequences of family planning and reproductive health programs have not generally been empirically estimated allowing for heterogeneity or the likelihood that omitted variables would influence quantity and quality in opposite directions. In other words, parent preferences and unobserved constraints on their household are likely to affect both fertility and other family choices (Schultz, 2005).

Omitting these variables from an analysis of the quantity and quality of children could account for an observed inverse association, which would not necessarily be causal, and a family planning program that reduced birth rates might therefore not contribute to the anticipated increase in child quality. One reason society might decide to subsidize the diffusion and use of birth control is the belief that better timing of births and fewer (unwanted) births will allow a woman to invest more in herself and in each of her children, and thereby increase the likelihood that they will escape poverty and achieve greater welfare in their lifetimes (Joshi and Schultz, 2007), which can again lead to the conclusion that birth control is an investment in development.

When it comes to Africa as one of poor or developing regions of this world, there is a must to emphasize on the fact that one of its greatest challenges is the urgent need for comprehensive, integrated reproductive health services, including family planning. If unanswered, this challenge will jeopardize poverty reduction measures taken by governments, civil society, and aid-based organizations and threaten their long-term growth prospects. Growing populations around the world contribute to resource depletion and environmental challenges affecting the food security and financial stability of some of the most vulnerable and hence hindering the economic development. The solution will nowadays keep being investing in birth control which will always be synonymous to investing in economic development, because, when families have fewer children, they have more disposable income to save or invest. In order to be successful, holistic approaches must encompass all relevant policy variables, such as economic opportunity, education, water and sanitation, energy, telecommunications, transport, finance, and health (Phumaphi, 2011).

In short, investing in birth control is investing in the development of all kinds, the socio-economic angle topping the list because, family planning programmes create conditions that enable women to enter the labour force and families to devote more resources to each child, thereby improving family nutrition, education levels and living standards. Slower population growth cuts the cost of social services as fewer women die in childbirth; and demand eases for water, food, education, health care, housing, transportation and jobs (UNFPA, 2007). That is why political and voluntary organizations' interventions are needed to maximize birth control strengths and opportunities.

II.2.2.3 Political will to ally birth control to the socio-economic development

The birth control allied to the socio-economic development cannot succeed without a positive and active political will which even influence and is to some extent influenced by Non-Governmental Organizations (NGOs), both national and international. Throughout the history of birth control methods have been accepted by some political systems and refuted by others with or without support from NGOs.

For the last 50 years or so, there has been a growing awareness that rapid population growth may have a dilatory effect upon socioeconomic development, but because of opposition from religious circles and a general reluctance of political leaders to seek to influence reproductive goals or means, official support for reducing population growth was slow to develop (Hirschman, 1981). However, with for example 1980s initiatives of voluntary organizations such as the International Planned Parenthood Federation and philanthropic institutions such as the Ford Foundation and the Population Council, in America, there was growing international support for family planning programs throughout the world, especially in Third World countries where the problem was seen as most urgent (Hirschman, 1981).

By the late 1960s, the fledgling family planning movement had gained sufficient legitimacy to be widely adopted as a public sector program in many developing countries. In part, this was supported by substantial financial assistance from Western nations and the United Nations. The expressed aims of such programs varied, some stressing lowered fertility levels to aid development objectives, others emphasizing maternal and child health goals

(Hirschman, 1981). Even though opposing philosophies also exist in the area of birth control vis-à-vis the socio-economic development (Bloom, 2001), as it has been the case in the communism system where big population was presented as human capital, manpower to be exploited and accelerate the economy (Schramm, 2011), on a higher speed than capitalists, it is being anonymously agreed upon that a controlled birth system help the society to reach economic targets which are parallel to the population growth, for economic stabilization.

Rwanda, being part of the world and having a special challenge to be among more populated countries, could not leave behind the birth control system for its economic growth.

II.2.3 Birth control in Rwanda

Whereas in USA, birth control was made official by courts around 1936 and that birth control methods were also introduced officially in 1960s, the Rwandan birth control history dates as of 1980s, as well illustrated under this sub-section which also puts an emphasis on the recent Rwandan informal policy to have a small family in Rwanda, before have a look at most frequent birth control methods in Rwanda.

II.2.3.1 Brief historical background of birth control in Rwanda

Despite the fact that rapid population growth, with its various effects on the economy and living conditions of the population, has been recognized as a problem in Rwanda since the colonial period, family planning activities in Rwanda did not start until 1981, with the creation of the *Office National de la Population* (ONAPO). Two years later, the first National Fertility Survey (NFS) was conducted, providing the first estimate of the country's fertility level. In the same year, ARBEF started its activities as a Rwandese Association for family well fare which became the first private association providing family planning services in Rwanda.

Based on the 1983 NFS results, in 1990 the government formulated a National Population Policy with an aim to reduce population growth. The goals were to cut the total fertility rate (TFR) by half, from 8.6 recorded in the 1983 survey to 4.0 in 2000, and to increase the CPR

from 2% in 1983 to 48% in 2000. In order to achieve these goals, ONAPO's activities were intensified to provide modern contraceptives throughout the country (Muhoza, 2013).

With the 1994 genocide, family planning activities were suspended, and ONAPO was dissolved in 2000. The issue of rapid population growth did not resurface until after the 2000 Demographic and Health Surveys (DHS) and the 2002 census revealed the persistence of high fertility (Muhoza, 2013). Moreover, the 2012 Population and Housing Census indicated that average annual population growth rate of Rwanda is still among the highest in Africa at 2.6% (NISR, 2012).

A significant campaign against population growth which began after the 2005 DHS indicated an increase in TFR from 5.8 in 2000 to 6.1 in 2005. In 2005 the Ministry of Health created the Maternal Child Health unit to respond to the issues of higher infant and maternal mortality rates and to the low level of contraceptive use. In 2006 it elaborated a family planning policy aiming to reduce fertility and also to improve infant and maternal health. In addition, by showing a high level of unmet need for family planning (37%), the 2005 DHS results reinforced the need to strengthen family planning services. DHS analysis showed that actual fertility was 1.5 children more than wanted fertility, with an actual TFR of 6.1 children per woman compared with a TFR of 4.5 if women had only the number of children they desired (Muhoza, 2013).

Recent reports indicate that the increment in terms fertility continues to go high, fortunately parallel to birth control improvement. For example, according to the 2010 Rwanda DHS, the increment at issue is due to the improvement of the standardized maternal health. The total fertility rate was then 4.6; the modern contraceptive rate increased to 45% and assisted deliveries to 69% in 2010 (MINISANTE, 2012).

2010 can be considered as a reference for family planning in all health facilities of the country, in terms of modern family planning methods. In fact, innovation has been made to expand community based provision of family planning commodities and the provision of

long term methods. From then, all hospitals have capacity to provide long term methods, including surgical methods like vasectomy (MINISANTE, 2012).

In brief, the Ministry of Health (MoH) has now made family planning a top priority in order to reach the ambitious target set for fertility. Maternal health still drains more attention as well as family planning, maternal, child health, and nutrition which also harbour the majority of essential targets in Vision 2020 (MINECOFIN, 2002), MDGs and EDPRS as well as the MoH's plans and priorities (MINISANTE, 2012).

The appellation MDGs stands for Millennium Development Goals. The 4th and 5th MDGs concern the reduction of child mortality and the improvement of maternal health, respectively. These two goals automatically include birth control and Rwanda is ranked among best performers in meeting MDGs targets (NISR, 2010).

Note also birth control is well captured in both phases of EDPRS (I & II) as Economic Development and Poverty Reduction Strategy. The EDPRS I covered the period 2008-2012 whereas the EDPRS II is covering the period 2013 - 2017 (MINECOFIN, 2013).

II.2.3.2 Small family campaign in Rwanda

Rwanda is among the most densely populated country in Africa, with substantial annual population growth. To address this issue, the Government of Rwanda sought new policies for family limitation as a way to facilitate more sustainable development.

In February 2007, the government of Rwanda announced that it was considering new legislation to limit the size of Rwandan families: It proposed that three children per woman should become the standard. Although forced family planning is a sensitive issue in Rwanda, given cultural attitudes and the losses experienced during the genocide, the plan was never presented to parliament and the president later characterized it as a family planning "sensitization" campaign. This can also be considered as an informal norm because almost all political leaders kept telling not only the Rwandan community but also the whole world that Rwanda has adopted a "three (3) children per woman system", as did the President of the

Republic of Rwanda – Paul Kagame, in his remarks at the African Climate Change Forum, London, Nov. 11, 2008 (Ndaruhuye, 2009).

Between 2010 and 2011, Niwemahoro and colleagues carried out a research on Fertility Preferences and Level of Family Planning in Rwanda, where Huye District was the Case study. Their research was motivated by the willingness of the Rwandan population to adopt family planning and to evaluate the three children per family policy as to adjust economic growth and population growth. Among other research questions, researchers asked the population about the ideal number of children per nuclear family because they were convinced that Women’s reproductive behaviour can be influenced by the ideal number of children they would like to have and the ideal number of children their husband/partner would like to have (Niwemahoro, 2011).

To determine the ideal number of children all women surveyed were asked one of the following questions (Ibid.):

- To women with no living children: if you could choose the exact number of children you would like to have in your lifetime, how many would you have?
- To women with living children: if you could go back to the time to when you had no children and choose the exact number of children you would like to have in your lifetime, how many would you have chosen?

Except for 5.15% of women who were not able to give a numeric response, giving instead a general answer such as “I don’t know”, “However many God gives me”, or “Any number”, the study results showed that the overall average ideal number of children reported by women in Huye District is 3.16 children per nuclear family. The results gave a hope of positive impact of three children per family policy as an implementation of family planning, even though more mobilization seems to be necessary for the ideal number to go even below three children per nuclear family (Ibid).

II.2.3.3 Most frequent birth control methods in Rwanda

Having adhered to the birth control system, Rwanda has a set of birth control methods. Among the most used there are hormonal, implantable devices, barrier and permanent methods. There are also some unreliable methods that are applicable in Rwanda, which are also subject to the present sub-section.

II.2.3.3.1 Hormonal methods

Prevent pregnancy by interfering with ovulation, fertilization, and/or implantation of the fertilized egg. The most frequent ones in Rwanda are pills. The 2005 and 2010 DHS even proved that the most used birth control methods in Rwanda are pills and injections with 26.3% compared to other methods (Muhoza, 2013).

II.2.3.3.1.1 Oral Contraceptives – the pill

The pill contains the hormones oestrogen and progestin. It is taken daily to keep the ovaries from releasing an egg. The pill also causes changes in the lining of the uterus and the cervical mucus to keep the sperm from joining the egg (US Department of Health and Human Services, 2011).

II.2.3.3.1.2 Shot/Injection

The birth control shot often is called by its brand name Depo-Provera. With this method you get injections, or shots, of the hormone progestin in the buttocks or arm every 3 months. A new type is injected under the skin. The birth control shot stops the ovaries from releasing an egg in most women. It also causes changes in the cervix that keep the sperm from joining with the egg (Ibid).

II.2.3.3.2 Implantable Devices

Implantable birth methods under use in Rwanda are implantable rods and Intrauterine Devices (IUD) as discussed under this point.

II.2.3.3.2.1 Implantable Rods

This is a matchstick-size, flexible rod that is put under the skin of the upper arm. It is often called by its brand name, “Implanon”. The rod releases a progestin, which causes changes in the lining of the uterus and the cervical mucus to keep the sperm from joining an egg. Less often, it stops the ovaries from releasing eggs. It is effective for up to 5 years (Ibid). In Rwanda, this method is commonly known as “Norplant system” as introduced in Rwanda in 1980s (Harrison, 1998).

II.2.3.3.2.2 Intrauterine Devices (IUD)

The IUD is a small plastic or copper device placed inside the woman's uterus by her health care provider. Some IUDs release small amounts of progestin. IUDs may be left in place for 5 - 10 years, depending on the device used. In Rwanda, IUDs started being used as modern contraceptive use among married women in 1992 at a 13% rate and were subject to a quick use increment because, for example, in 2007, 43% of the countrywide health centres were capable and able to offer IUD insertion (Mukakarara, 2011).

II.2.3.3.3 Barrier Methods

The most utilized barrier birth control methods in Rwanda are male and female condoms.

II.2.3.3.3.1 Female Condom

This condom is worn by the woman inside her vagina. It keeps sperm from getting into her body. It is made of thin, flexible, manmade rubber and is packaged with a lubricant. It can be inserted up to 8 hours before having sex. Use a new condom each time you have intercourse. And don't use it and a male condom at the same time (US Department of Health and Human Services, 2011). Compared to the male condom, knowledge and acceptance of the female condom is much lower among potential users in Rwanda, mainly due to the fact that information and products are not yet widely spread (ILO, 2006).

II.2.3.3.3.2 Male Condom

Male condoms are a thin sheath placed over an erect penis to keep sperm from entering a woman's body. Condoms can be made of latex, polyurethane, or "natural/lambskin". The natural kind do not protect against STIs. Condoms work best when used with a vaginal spermicide, which kills the sperm. And you need to use a new condom with each sex act (US Department of Health and Human Services, 2011). Condom distribution in Rwanda has been mainly through public services (health and military) and social marketing as a largest provider (ILO, 2006) and they are not only used in birth control but also in the fight against HIV/AIDS and other Sexual transmitted diseases known as STDs (MINISANTE, 2012).

II.2.3.3.4 Natural methods

Even though some of them are accused of being superficial and unreliable, natural birth control methods that under use in Rwanda, are *coitus interruptus*, douching shortly after sex and breastfeeding, continuous abstinence and the rhythm method.

II.2.3.3.4.1 Coitus interruptus

Coitus interruptus, or withdrawal, is one of the oldest forms of contraceptive methods known to man. It is the withdrawal of the penis from the vagina before ejaculation. For the success of this method, man must need self-control and must know when he is about to ejaculate. It is not a fully reliable method because some semen frequently escapes before full withdrawal and before ejaculation, which is enough to cause a pregnancy. Moreover, withdrawal does not provide protection from STDs such as HIV. Infectious diseases can be transmitted by direct contact with surface lesions and by pre-ejaculatory fluid (Kennard, 2006).

II.2.3.3.4.2 Douching shortly after sex

Also known as douching immediately after intercourse, douching shortly after sex means washing immediately after sex. Even though it is studied among other birth control methods from the 19th Century, studies have shown that douching is not an effective contraception. It is true that this may give the lady a squeaky clean feeling, but it will not help prevent pregnancy. Showering or bathing after sex can help clear the vulva of semen. However

neither of these can flush out sperm that have already entered the uterus through the cervix, because sperm can make their way past the cervix within 90 seconds after ejaculation (Songhai, 2012).

II.2.3.3.4.3 Lactational Amenorrhea Method (Breastfeeding)

Lactational Amenorrhea Method (LAM) is defined as the informed use of breastfeeding as a contraceptive method by a woman who is still amenorrheic and who does not feed her baby with supplements for up to 6 months after delivery. This would provide more than 98% protection from pregnancy in the first 6 months postpartum according to advocates of this method (Van der Wijden, 2008).

Data published in the early 1970s showed that women who breastfed were less likely to ovulate early postpartum, and that if breastfeeding were more intensive, they were less likely than partial or non-breast feeders to experience a normal ovulation prior to the first menstrual-like bleed. In 1988, researchers from several centres around the world met to share their findings at the Rockefeller Bellagio Conference Centre, and agreed that three criteria could be sufficient to predict fertility return. These findings were then presented to a group of family planning service providers at Georgetown University, resulting in the codification of LAM as a family planning method. Participants in a second Bellagio meeting held in 1995 brought additional studies that reflected improved knowledge of breastfeeding and fertility, and included studies of Lactational Amenorrhea Method (LAM) in use. All studies presented confirmed the original findings and demonstrated the potential, efficacy, and usefulness of the LAM. Subsequently, studies continue to support these initial findings (Labbok, 1997).

II.2.3.3.4.4 Continuous Abstinence

This means not having sex (vaginal, anal, or oral) at any time. It is the only sure way to prevent pregnancy and protect against sexually transmitted infections (STIs), including HIV (US Department of Health and Human Services, 2011). It is possible to find any country of the world, Rwanda included; couples who choose to spend some period of time without having sex, for various purposes which can include birth control.

II.2.3.3.4.5 Rhythm method

Also called natural family planning method, the rhythm method is when you do not have sex or use a barrier method on the days you are most fertile (most likely to become pregnant). A woman who has a regular menstrual cycle has about 9 or more days each month when she is able to get pregnant. These fertile days are about 5 days before and 3 days after ovulation, as well as the day of ovulation. To have success with this method, the women need to learn about their menstrual cycle. Then she can learn to predict which days she is fertile or “unsafe” (US Department of Health and Human Services, 2011). In Rwanda, some tools like bids commonly known as *urunigi* and the ordinary Gregorian calendar are used to count menstrual days and be sure of fertile days (Hope Foundation Rwanda, 2014).

II.2.3.3.5 Emergency contraception

Used if a woman’s primary method of birth control fails. It should not be used as a regular method of birth control. Emergency contraception keeps a woman from getting pregnant when she has had unprotected vaginal intercourse. "Unprotected" can mean that no method of birth control was used. It can also mean that a birth control method was used, but it was used incorrectly, or did not work (like a condom breaking). Or, a woman may have forgotten to take her birth control pills. She also may have been abused or forced to have sex. These are just some of the reasons women may need emergency contraception (US Department of Health and Human Services, 2011).

II.2.3.3.6 Permanent birth control methods

Permanent birth control methods are called alike because they are irreversible. These are tubal sterilization and vasectomy.

II.2.3.3.6.1 Female surgical sterilization, tubal sterilization

Also known as tubal sterilization, the female surgical sterilization closes the fallopian tubes by being cut, tied, or sealed. This stops the eggs from going down to the uterus where they

can be fertilized (US Department of Health and Human Services, 2011). Female sterilization is among most used birth control methods in Rwanda (Ayad, 2009).

II.2.3.3.6.2 Male surgical Sterilization, vasectomy

For men, having a vasectomy keeps sperm from going to his penis, so his ejaculate never has any sperm in it. Sperm stays in the system after surgery for about 3 months (US Department of Health and Human Services, 2011). In Rwanda, vasectomy is still underutilized, due to various surrounding myths on side effects and other reasons (Nsengiyumva, 2013) discussed in the next sub-section and coming chapters.

In summary, one can underline that different methods suit different people. The choice of contraception may change depending on age, health and status of the beneficiary's relationship. People of any age can get contraception from a doctor or nurse. The beneficiary of any birth control is therefore urged to talk to his/her doctor or nurse if he is unsure which method is best for him/her. Medical agents will ask about his/her health and family's health so they can recommend the safest contraception for him/her. They will also check that he understands what he is doing and that he is not being pressured into having sex when he does not want to.

However, the beneficiary has the final word in that birth control remains voluntary or facultative. That is why the beneficiary can also choose vasectomy among other methods.

II.2.3.4 Vasectomy compared to other birth control methods

Compared to other birth control methods, vasectomy has a greater contribution to the socio-economic development of communities and the nation as a whole because it provides an effective birth control with limited and almost absence of side effects to enable couples to freely deal with their development activities. This sub-section gives details on the effectiveness at issue, among other points.

II.2.3.4.1 Vasectomy as the most successful method

There is no currently available contraceptive that has a higher success rate than vasectomy. IUD is also said to be more successful but it is less than vasectomy. For example, researches proved that there is a progesterone-coated intrauterine device (IUD) that has recently become available for women that approaches the 1/600 published failure rate of vasectomy (Turek, 2014).

Currently, condoms, rhythm method, withdrawal and abstinence are the only other options for men; but, all of these have a higher failure rate than vasectomy. Moreover, they are not as safe as vasectomy because sometimes, partners may fail to use the condom in a correct and regular manner. This is the same withdrawal, rhythm method and abstinence which are not really always certain (Ibid).

II.2.3.4.2 Vasectomy effectiveness and fewer side effects

Vasectomy enjoys advantages compared to tubal sterilization, as another permanent birth control method, of lower cost, less pain, greater safety and faster recovery than tubal ligation or compared for example to female birth control pill, the most used method so far. That is one of strong reasons to confirm that vasectomy is considered as the most effective birth control method (Sokal, 2009).

The female oral contraceptive pill was developed in the 1950's (after vasectomy) based upon the premise that a single egg per month is a worthwhile target for contraception; the pill has met with wide commercial success. However, despite its widespread use, the female pill is far from an ideal contraceptive product due to excessive side effects. Side effects were the most frequent reasons given by women for discontinuing oral contraceptive use, with as high as 51% reporting at least one side effect (Turek, 2014).

In addition and in line with hormonal methods, for example, based on the recent re-evaluation of the effectiveness and risks of long-term hormone replacement in menopausal women in the Women's Health Initiative study, reproductive age women have recently

become more concerned about the long-term side effects of oral hormone contraceptives. Dr. Paul Turek has seen this play out as more men seem to be considering vasectomy because of this open ended issue with female hormone supplements (Ibid).

However, even though it assures a satisfactory birth control, vasectomy is not perfect.

II.2.3.4.3 Reasons to choose an alternative to vasectomy

The only real negative aspect of vasectomy as agreed upon by all researchers by unanimity and which can lead to the choice of an alternative method is the fact for vasectomy to be irreversible as it is for the tubal ligation. That said, vasectomy may not be the best contraceptive choice for couples who want to increase the time between pregnancies, or who have even the slightest reason to believe that they may want to have children in the future. Another reason to choose an alternative to vasectomy is if the male partner is anxious or concerned about what a vasectomy will do to his sexual performance. Concern about this issue may lead to stress, and stress is likely to impair a man's ability to have an erection or ejaculate, even though the production of sperm and the male hormone levels are unchanged (Ibid).

Finally, a vasectomy is not the answer to a problem of failing erectile function. If a man is interested in getting a vasectomy in hopes of improving the female partner's attitude toward sex or to increase his own sexual powers, then disappointment is likely. On the other hand, the freedom from the fear of producing unwanted children might significantly increase the couple's mutual enjoyment of sex (Ibid).

II.2.3.4.4 Vasectomy and socio-economic prospects in Rwanda

More than a half of the Rwandan population is composed of women. Among other advanced reasons, there is the 1994 genocide against the *Tutsi* which aimed more at exterminating men than women. They are the same men who lost more lives in struggling for stopping genocide, as well as fighting for Rwanda liberation war. Other men, because of their more remarkable role than women in the genocide against *Tutsi*, are being executing their penal sanctions and

therefore not contributing to the socio-economic development of the country. This situation even discouraged so many Rwandans after losing their ones in the genocide against *Tutsi* and liberation war, because it was not easy to advocate for vasectomy as it was before 1994. Fortunately, some years later, the population started getting convinced in regards to birth control methods, vasectomy included (Muhoza, 2013).

Huge losses of men's lives then called upon women to contribute more to the socio-economic development of their country - Rwanda. In order to achieve this goal, women need to live a healthy life and to have a limited and wanted number of children to care for. This cannot be possible while using birth methods which are subjected to more side effects. This will require their husbands to actively contribute to the birth control system.

As afore-illustrated, men have to choose among condoms, rhythm method, withdrawal, abstinence and vasectomy as male birth control methods into existence so far. The most effective, successful and reliable among all these options for men is vasectomy.

Once done, women will be busy working for wages or looking for such work. Their earnings will sustain not only themselves but millions of children, men and fellow women, or will simply boost the economy of the country, instead of spending more time caring for numerous children, seeking for medical treatment due to other birth control side effects and will thus, safeguard the national labour force of which women have a big part of.

II.3 Factors surrounding vasectomy acceptability

The existing literature on vasectomy provides for factors surrounding its acceptability. Some of these factors are summarized as barriers to Choosing Vasectomy over Other Methods whereas other factors play a positive role in facilitating people to opt for vasectomy among other birth control methods.

II.3.1 Barriers to choosing vasectomy over other methods

Barriers to choosing vasectomy over other methods included satisfaction with the current method of contraception, lack of knowledge or rumours regarding vasectomy, the procedure's permanence and the inability to predict future needs and desires, and a lack of trust in one's spouse.

II.3.1.1 Lack of information and prevalence of myths and rumours

A poor understanding of vasectomy, including belief in rumours about castration and loss of virility, was frequently mentioned. Interestingly, rumours and misinformation about vasectomy were more often mentioned by sterilized men, who frequently provided this as a specific reason for having delayed the procedure. Non-sterilized men also mentioned rumours more generally and most often cited lack of information as a specific reason for not considering the procedure. Several non-sterilized men stated that given further information, they might consider the procedure (Frajzyngier et al., 2006).

Being an unfamiliar method, vasectomy is subjected to some myths, both health and sex, all herewith shared. In addition to those myths, the study illustrates vasectomy truths which would be relied on to make the method more effective and efficient. Researches demonstrated that there are some myths that vasectomy causes testicular cancer. The truth is that no scientific research confirmed these rumours. Moreover, some myths say that vasectomies offer protection from STIs and HIV/AIDS. This statement is false because as to protect against STIs such as HIV/AIDS, the couple would be required to use a condom (Kishori, 2010).

Some myths went further to even say that vasectomies are really painful and cause bad swelling. These expectations are normally found to men who have never gone vasectomy operations whereas self-reports from men who have undergone the procedure do not support this belief, and show that the level comfort experienced after the procedure tends to be low (Stopes, 2003). Next chapters will provide expectations of Rwandans of the same myth.

In line with sex, some rumours say that vasectomies lead to anxiety free sex because they remove fear of the partner becoming pregnant. They also say that vasectomies mean never having to use condoms (Ibid).

The truth is that vasectomy is an effective male sterilization procedure and whilst protecting against pregnancy. However, there is necessity of further protection such as condoms in order to protect oneself against STIs (Ibid).

Religious myths over vasectomy are that vasectomy is against religious and moral beliefs and this might be true for some Christians who want to abide by the bible which says that people would multiply as many as stars and sands (Kishori Mahat, 2010).

II.3.1.2 Lack of consistent service availability

A number of participants reported difficulty accessing vasectomy services in a timely manner due to lack of availability of providers and equipment. While political leaders have taken a strong, vocal stand on FP promotion from the perspective of national development, participants called upon a larger investment of programs and resources toward this goal (Frajzyngier, V and Bunce, A. et al., 2006).

II.3.1.3 Vasectomy irreversibility and fear of surgery

The permanence of vasectomy and uncertainty about the future represented another barrier to vasectomy acceptance. Some men expressed fear that one or more of their children would die and that they would no longer have the ability to reproduce; others feared that should their wives die, their inability to reproduce would leave them unable to remarry. On probing the reasons for disapproval revealed more concerns which were frequently mentioned by respondents like they think women are best suited for such operations as women do not do hard work, they live in home and hence can take rest and tubectomy is easier than vasectomy and does not require much rest, vasectomy will adversely affect their income, it will lead to general weakness and might result in reduced sexual performance, fear of surgery (Saoji, 2013).

II.3.1.4 Trust

A lack of trust in the faithfulness of one's spouse was mentioned as a barrier by both men and women: Men were concerned that a loss of virility resulting from the procedure would lead their wives to be unfaithful, while women were concerned that a vasectomy would provide their husbands with license to engage in sex out of wedlock (Frajzyngier, V and Bunce, A. et al., 2006).

II.3.2 Facilitating factors to choosing vasectomy over other methods

Besides barriers against vasectomy acceptability, studies made in Tanzania, India and Nepal showed that there are factors leading to vasectomy acceptability such as information Education Communication, financial hardship, spousal influence, and dissatisfaction with previously used methods as well as sterilized men as role models.

II.3.2.1 Information education communication

Information Education Communication (IEC) constitutes one of major tools to make vasectomy knowledgeable. A strategic IEC can be laid on group, family couple and individual counselling on all aspects of male sterilization. This can be drawn from successful experiences of Karimnagar and Warangal, India, where mass media like the printed press, radio and television, due to their large influence and their character to be widely reachable, contributed a lot to vasectomy acceptability (Murthy et al., 2003).

External researchers commend the campaign sessions made by the Rwandan Government in terms of IEC, especially from February 2011, when the government launched the vasectomy campaign, targeting families who have more than five or six children, alongside their HIV prevention campaign to encourage all men to be circumcised. This campaign went beyond Rwandan territories to be known by a Kenyan researcher, for instance, who came to Rwanda to meet with master vasectomy trainer Dr. Leonard Kagabo to determine the feasibility of conducting vasectomy missions in both countries. The researcher confirmed that in Rwanda, the IEC made contraceptives more widely available, affordable and acceptable (Tyjen, 2011).

II.3.2.2 Financial hardship

Financial hardship was an important factor facilitating an individual's decision not to have any more children. This hardship was discussed generally, in terms of a man's ability to ensure the health of his family, as well as specifically, in terms of the ability to educate one's children (Muhondwa and Rutenberg, 1997).

II.3.2.3 Spousal influence

Concern for the wife's health, particularly in terms of problematic childbirth, side effects from temporary FP methods, and the knowledge that vasectomy is a minor method compared to tubal ligation, facilitated a man's decision to undergo a vasectomy. Most sterilized men also mentioned their wife's approval as a factor in their decision. Nonetheless, spouses sometimes had a negative influence on the husband's decision to have a vasectomy. In some cases, a wife convinced her husband to postpone the procedure until her desired number of children had been attained, forbade the procedure, or decided to undergo a tubal ligation instead (Frajzyngier et al., 2006).

II.3.2.4 Dissatisfaction with previously used methods

The research made in Kigoma District of Tanzania showed dissatisfaction with previously used methods, either due to side effects, inconvenience, or perceived lack of effectiveness, facilitated the choice of some men to undergo vasectomy (Ibid).

II.3.2.5 Sterilized men as role models

Many of the sterilized men interviewed had spoken to satisfied clients prior to undergoing the procedure. These men played a particularly important role in allaying fears concerning the loss of sexual ability after vasectomy (Ibid).

In sum, the second chapter developed details regarding methods of birth control which include vasectomy. That is Hormonal methods that include oral Contraceptives – the pill and Shot/Injection, implantable Devices which are rods and IUDs, barrier Methods which are

condoms, both female and male, permanent birth control methods which are female surgical sterilization, tubal sterilization and male surgical Sterilization – vasectomy. There are also unreliable methods like *coitus interruptus*, douching shortly after sex and breastfeeding. There are finally more natural methods which are continuous abstinence and rhythm method. Emergency contraception is also one among other birth control methods covered under this chapter.

In summary, apart from its scientifically provable negative aspect of being irreversible, nevertheless myths and rumours surrounding vasectomy; the second chapter helped to see how much vasectomy is currently considered as the most successful birth control method, most effective with fewer side effects, compared to other methods. Therefore, one would partially conclude that vasectomy is the best method which can enable couples to concentrate on their economic activities without frequent health and child care interruptions, as well as to invest money and time which were supposed to care for children in other businesses and therefore accelerate the socio-economic development.

This reviewed literature helped to set an adequate methodology to collect views of Rwandans on vasectomy among other methods and analyze them within vasectomy and socio-economic development convergence guidelines.

Chapter III. RESEARCH METHODOLOGY

III.0 Introduction

The study has as main objective to assess the level of awareness and acceptability of vasectomy as a modern, irreversible and male-focused birth control method meant to enable the socio-economic development of the Rwandan households and the country as a whole. This objective cannot be achieved in absence of mechanized steps to be defined and followed, or in other words, without an appropriate methodology.

In the same angle, this chapter describes mainly how the research was conducted and all involved participants and conditions for their choice, the area of study and used techniques for data collection, discussion, interpretation and synthesis, research ethical considerations, among others.

III.1. Research design

The researcher used an exploratory design for the present study. It enabled to acquire information about the awareness and acceptability of vasectomy as a good catalyser for development.

In addition to the descriptive design, this research study also took an applied approach to assess how theoretical information is translated into practice with a primary significance to solve the community problems and prevent eventual ones from occurring (Fraenkel & Wallen, 2006). More specifically and in line with the area of study, the research focused on advantages of vasectomy over other birth control methods vis-à-vis the attitude of the community towards its acceptability for a real socio-economic development.

III.2. Participants

The research targeted a reproductive population presented under this sub-section. However, because the research could not be carried out over the whole population, a sample was chosen.

III.2.1 Research target population

Based on vasectomy as a birth control method, the research targeted a legitimately reproductive population and administrative and health authorities meant to assure birth control, but these ones in a subsidiary manner.

A legitimately reproductive population means people aged 21 years at least as they are allowed to get married under the Rwandan family law, as the minimum age (Article 171 of the CCBI, 1988). The maximum age was not limited to 35 years of age which is advised by medical and health organs for a maximum of the better birth giving age. Rather, considering that some Rwandans keep giving birth till menopause for the female part of study and probably in an unlimited period of time for the male part of the study, 50 years of age were considered as the maximum of the female targeted population, whereas there was no age limit for men. Note that, in order to harmonize research scope through matching vasectomy with the socio-economic development, the period between 21 years of age and 50 was considered as a productive period in terms of employment, job creation, projects running and management for a visionary development, a period below the legitimate age for early retirement.

However, the research could not be carried on the whole Rwandan reproductive population, which led to the need for a sampling strategy.

III.2.2 Research sample

Among the whole population, the researcher strategically chose a specific district where she believed to find needed information, enough to provide needed data (Fraenkel & Wallen, 2006).

That is why, the research was spatially limited to the Gasabo District of the Kigali City, an area covered by Kibagabaga Hospital. This health institution was also chosen because of its reputation to be among health institutions tasked with vasectomy services in a pilot manner.

Gasabo District has both urban and rural area and a diverse population where both educated and non-educated people can be found. This helped the researcher to assess if really vasectomy is well known and accepted by civilized or uncivilized members of the population. More importantly, in order to have views from a pure rural reproductive population, the sample was extended to Rulindo District, Bushoki Sector where there is a reference health centre know as Tare.

The researcher also approached experts in vasectomy issues to contrast people’s views with the scientific reality. These were composed of 2 medical doctors, 6 nurses and 2 local leaders at sector level who are in charge of social issues among other attributions at Bushoki Sector. Two additional people from other Districts, Kicukiro and Ngororo, have been randomly selected to part of the research sample.

III.3 Primary data collection methods

The researcher assembled data mainly using questionnaires whereby respondents totalled a hundred (100) persons. The following table illustrates their categories and number.

Table 1: category and number of respondents

Category of respondents	Number of respondents	Percentage
Sterilized men	30	30%
Sterilized men’s wives	30	30%
Non sterilized families	30	30%
Administrative and Health Staff	10	10%
Total	100	100%

Source: Primary data, December 2013 – January 2014

As it can be read from table 1, respondents from families who have been subject to vasectomy represent around 60% of the sample. This helped to have families’ confession and witness in regard to vasectomy factors, acceptability, operation and impact on the socio-economic development of the same families. On the other side, 30% of respondents were those ones who have not been yet subject to vasectomy. The researcher wanted to know their

awareness on vasectomy and if they are ready to adhere to the method or not and reasons behind, in order for the research to have a good point of recommendations, at the end of the study. Administrative and Health Staff provided appreciable support for, in addition to questionnaires; they gave additional information through interview. They were composed of two medical doctors, six nurses and two local authorities on sector level.

Structured and non-structured interviews were used to collect data in addition to data collected using questionnaires. This also helped those people who are not used to filling in researched-based questionnaires to provide needed information. The direct observation was also used but limited to the assessment of respondents' feelings, appearance and reaction against asked questions. This helped to assess the reliability of provided information in regard to vasectomy and its impact onto the socio- economic development.

III.4 Data analysis and presentation

In order to generate a meaning and to answer to the research questions, collected data were analyzed and thus organised into useful, clear and understandable information. It included editing, coding the information and putting some of numerical data into percentages. It is through the data collection were mistakes that were made by respondents were also corrected, and irrelevant information eliminated.

More specifically, the researcher analyzed data using percentages and frequencies through MS Excel tabulation for close-questions and some open questions as well as examining and confronting appropriate responses from the respondents and for open questions.

In regards to presentation, data collected through closed- questions and some open questions are presented in the present work through tables and figures whereas for other open questions, the interpreted data is presented in a normal drafting manner with the researcher's individual critical judgments and synthesis.

III.5 Validity and reliability

To ensure that the research data are valid and reliable, the researcher worked closely with Kibagabaga Hospital which gave basic information of sterilized families and health centres which they access. To get views and have the portrait of vasectomy in pure rural areas, the researcher also approached Tare Health Centre nurses and Bushoki Sector leaders (Rulindo District, Northern Province) who not only helped to be in contact with sterilized families but also responded to the research questions through questionnaires and interviews.

To avoid superficial information, the researcher met each and every person who was targeted. That is even why none of a hundred (100) copies of questionnaires addressed to sterilized and the neighbouring non sterilized families went missed. The single problem was on administrative and medical authorities' side this due to their busy workload. They promised appointments with the researcher to guide her on field where concerned people were residing, but they did not manage to honour any promise because of the nature of their work. They however directed the researcher who successfully met some of targeted persons as long as they were coming to look for administrative and medical services, whereas others were met where they were residing.

To furthermore cross-check the reliability of collected data from the sample, the researcher interviewed medical agents and compared primary data with secondary data, before proceeding to harmonize a synthesis that involved conclusions and recommendations.

III.6 Ethical considerations

For ethical purposes, while the data in this study was collected, the researcher ensured that no one else has access to the data. To make respondents anonymous and thus protect their information and give them the freedom to provide needed data, the researcher did not use the names of the respondents in any publication that describe the research at any point of time. The researcher rather informed respondents that information collected would be used for academic purposes and would be kept in a confidential manner. Therefore, the respondents' protection and confidentiality were assured.

Chapter IV. DATA PRESENTATION, INTERPRETATION AND DISCUSSION

IV.0 Introduction

In this chapter, the collected data are presented, interpreted and discussed in a simple tabulation representing views and responses of the Rwandan reproductive community vis-à-vis the socio-economic development of themselves and their families.

This chapter has discussed result of the closed and open-ended questions responded to by one hundred participants from sterilized families, non sterilized ones, medical agents and local administrative leaders, as well as data collected via interview and direct observation.

Bearing in mind that before the field work, objectives and research questions were pre-set, the present presentation, analysis and discussion do not go beyond boundaries set by the study scope and which were explained to respondents before providing their information.

Findings presented and discussed are focused on the respondents' family status, their vasectomy awareness and acceptance, as well as their views in regard to vasectomy health, social and economic impact, on both positive and negative aspects.

IV.1 Identification of respondents

Respondents were first identified individually. They were also identified based on their residences and lastly families they belong to.

IV.1.1 Personal and residential identification

The researcher focused on respondents residing in Gasabo and benefiting from medical services under Kigabagaba Hospital as well as respondents from Rulindo District who benefit from medical services under Tare Health Centre. These respondents also enter into the reproductive age-range of the society, with some minor exceptions.

IV.1.1.1 Sex of respondents

As illustrated under the methodology, 30% of the target group, that is, sterilized men were of course men with their wives who also represent 30% of respondents as sterilized men's wives. This is the same rate for non-sterilized families where wives and their husbands were asked to give their views in regard to vasectomy. On medical and administrative staff side which represents 10% of the research sample, 2 were male medical doctors, 6 were nurses whereas remaining 2 were female local leaders having social affairs in their attributions at Bushoki Sector, Rulindo District.

IV.1.1.2 Age of respondents

Even though the target was to carry out a research on men and women comprised between 21 and 50 years of age, the field work brought in some positive exceptions.

Table 2: Age of respondents

Age	Sterilized men		Wives of non sterilized men		Non sterilized	
	Number	%	Number	%	Number	%
21 – 35	5	17	18	60	21	70
36 – 50	22	73	12	40	9	30
51 and above	3	10	0	0	0	0
Total	30	100	30	100	30	100

Source: Primary data, December 2013

As well illustrated by table 2 above, more sterilized men are comprised in the adult layer of reproductive society, that is, 36 to 50 years of age, where they represent 73% of sterilized men who responded to the researcher's questions. Younger sterilized men comprised from the legitimate age to get married in Rwanda, 21 years of age (Article 171 of the CCB I, 1988), to the adult age are only 5 and thus representing 17% of respondents whereas elder sterilized men who are aged 50 years of age and beyond are only 3 representing 10% of respondents.

In contrast with sterilized men status, the same table shows that wives of sterilized men are younger than their husbands because the adult age has 12 wives representing 40% against 73% of their adult husbands whereas 18 wives, that is, 60% of sterilized men's wives are between 21 and 35 years of age, inclusively against 17% of their husbands who aged under 36 years. On the other hand, no sterilized man's wife is aged beyond 51 years of age which means that under Rwandan families husbands are elder than their wives which also emphasizes on the fact that women give birth while still younger.

Furthermore, as it can be read through the above table, non sterilized families are younger. 21 respondents who represent 70% are under 36 years of age whereas only 9, that is, 30% of non sterilized families are adult. This matches with some of their responses to the researcher when asked about vasectomy where plenty of them said that they are still younger and therefore still need children and that they shall think about vasectomy when they will be old enough and have got the desired number of their children. Rather, they use renewable birth control methods.

Discussions of these results can lead to an assumption that men who accept to be sterilized are those ones who have already got enough children after a good period of marriage and opportunity to give birth to many children. Which means that is rare for men before adult age to be subject to vasectomy.

IV.1.1.3 Residence of respondents

As the research scope was mainly limiting the study to Kigali City, Gasabo District as a hybrid district because it encompasses rural and rural regions, and Rulindo District as a rural region. Respondents' residence is presented in table 3.

Table 3: Residence of sterilized and non-sterilized families

District	Sector	Sterilized families		Non sterilized families	
		Number of respondents	%	Number of respondents	%
Gasabo	Kinyinya	10	16.6	8	26.6
Gasabo	Rutunga	4	6.6	0	0
Gasabo	Jabana	4	6.6	0	0
Gasabo	Kimironko	6	10	2	6.6
Gasabo	Jali	2	3.3	0	0
Gasabo	Bumbogo	2	3.3	0	0
Gasabo	Remera	4	6.6	2	6.6
Gasabo	Gikomero	2	3.3	0	0
Gasabo	Nduba	2	3.3	0	0
Gasabo	Gatsata	0	0	2	6.6
Gasabo	Ndera	0	0	2	6.6
Nyarugenge	Kimisagara	0	0	2	6.6
Nyarugenge	Nyarugenge	0	0	2	6.6
Kicukiro	Gikondo	2	3.3	0	0
Ngororero	Matyazo	2	3.3	0	0
Rulindo	Bushoki	20	33.3	10	33.3
Total		60	100	30	100

Source: Primary data, December 2013 – January 2014

As illustrated by the table above, 63.4% of respondents from sterilized families of the research, that is, 38 respondents out of 60 reside in Gasabo District, Kigali District, whereas 22 respondents reside in rural areas (36.6%); that is 20 respondents from Rulindo District and 2 from Ngororero District.

However, as the table 3 illustrates it, some respondents' residences cannot be totally qualified as urban but rather semi urban or semi rural. That is to mean that the research also targeted semi rural sterilized families. The present research managed to have some from various administrative sectors which are Nduba (3.3%), Gikomero (3.3%), Bumbogo (3.3%), Rutunga (6.6%), Kinyinya (16.6%), Jabana (6.6%), and Jali (3.3%), a good evidence that vasectomy is not only a method for pure urban residents.

The interpretation of table 3 also reveals that Kinyinya has more sterilized respondents (16.6%), a situation which matches with the fact that the Kinyinya Health Center was sensitized and mobilized about vasectomy, in the pilot phase, more than other health centers as a health center reporting to Kibagaba, a vasectomy reference Hospital. This is the same reason for Kimironko Sector to have scored the 2nd position with 10% of respondents from sterilized families.

Table 3 furthermore demonstrates that the researcher came across 2 sterilized families while on field in Gasabo District but who by the time were residing in Gikondo, a pure urban Sector of Kicukiro District, representing 3.3% of respondents from sterilized families and 2 respondents from Matyazo, a pure rural Sector from Ngororero District, a situation matching with the principle that no sample is exhaustive and completely limited.

In regards to non-sterilized families, table 3 shows that, apart from 4 respondents (13.2) who were residing in Nyarugenge District, Nyarugenge and Kimisagara Sectors, met on field during the data collection period and 10 respondents from Rulindo District as a rural area (33.3), 46.5% of respondents from non sterilized families who have been subject to the present research are residents of Gasabo District, in both urban and semi urban sectors where Kinyinya Sector scored the higher number of respondents in this category with 26.6%, due to the fact that the research was concentrated to Kibagaba Hospital which neighbours Kinyinya Health Centre as health facilities with remarkable vasectomy success stories and so is Tare Health Centre of Bushoki Sector, Rulindo District.

IV.1.1.4 Respondents' level of education

By assessing the level of education of respondents, the present research aimed to see if vasectomy correlates with education.

Table 4: Respondents' level of education

Level of Education	Sterilized men		Sterilized men's wives		Non sterilized families	
	Number	%	Number	%	Number	%
None	3	10	2	6.6	7	23.3
Primary	18	60	23	76.6	12	40
Secondary	7	23.3	4	13.3	5	16.6
University	1	3.3	1	3.3	6	20
Total	30	100	30	100	30	100

Source: Primary data, December 2013 – January 2014

The above table gave a response which also corresponds to the Rwandan education reality where more Rwandans are those who did only primary education. Thus, 60% of sterilized men subject to the present study did only primary studies. Interestingly, the remaining 23.3% is composed of sterilized men who got an advanced education with 3.3% who even graduated from higher learning education, whereas 10% of them did not go to any school, a reality which might be associated with the fact that the research also covered rural areas. These varieties in level of education prove that vasectomy is crosscutting and suitable to all category of husbands regardless their level of education.

As it was for sterilized men's level of education, some of their wives also did only primary studies with a higher percentage of respondents (76.6%) whereas only 13.3% of them did advanced studies, 3.3% who did higher learning studies and 6.6% illiterate women, which situation also corresponds to the Rwandan level of education status. This means that all wives regardless their level of education can allow or incite their husbands to opt for vasectomy.

Non sterilized families are also found in all those categories of education, as it has been the case for sterilized men and their wives. Surprisingly, respondents who are subject to primary education have the lowest percentage 40% compared to other categories, that is 76.6% of sterilized men's wives against 60% of sterilized men. Consequently, it seems that non sterilized families are those who have more advanced level of education with 20% who did higher learning education against 3.3% in each of two previous cases, which situation might also have a good impact on birth control. However, this does not mean that non sterilized

families do not have illiterate people because, contrarily to other categories, 23.3% of non sterilized families are illiterately, a highest rate compared to 10% of illiterate sterilized men and 6.6% of illiterate wives of sterilized men.

This interpretation illustrates well how vasectomy is a birth control method adopted for or not regardless the level of education because some of those who did basic, advanced or higher education, or those illiterate ones are sterilized or not.

IV.1.2 Identification within the family

By assessing respondents within their families, the research took into consideration their civil status, size of nuclear families they belong to, used family planning methods and birth spacing issues.

IV.1.2.1 Civil status of respondents

Legally speaking, the recognized civil status categories are four (4). One is either married, or divorced, or widowed, or single. However, some families live together as husband and wife without a legal marriage, a situation known as informal cohabitation. Table 5 presents the civil status of families who have been subject to the present research.

Table 5: Respondents' civil status

Civil status (per family)	Sterilized families		Non sterilized families	
	Frequency	%	Frequency	%
Married	22	73.3	24	80
Divorced	2	6.6	0	0
Widowed	0	0	0	0
Cohabitation	6	20	6	20
Single	0	0	0	0
Total	30	100	30	100

Source: Primary data, December 2013 – January 2014

As it can be read in the table given above, the majority (73.3%) of sterilized families are married. Only 2 families (6.6%) divorced, whereas 6 families (20%) live under informal

cohabitation as wife and husband without any civil marriage, practice likely to be observed more in the Rwandan rural areas than urban ones. Note that husbands of divorced families told the researcher in an interview that they chose to be sterilized to avoid giving birth to other children with other women than mothers of their children. On the other side, the above table shows that 80% of non sterilized families are married whereas 20% are concubine.

For highest percentages to belong to married families in both sterilized and non sterilized couples, in the above table, it is has a logical significance because the research was focusing on nuclear families of husbands and wives still living together, even though field results brought in some divorced sterilized families (6.6%).

IV.1.2.2 Size of the family

There is about a decade that the Government of Rwanda launched a campaign to sensitize Rwandans about limiting birth to three children maximum. Table 6 presents the size of respondents' families and gives a general image on the outcome of the campaign at issue.

Table 6: Size of respondents' families

Number of children (per family)	Sterilized families		Non sterilized families	
	Number	%	Number	%
1 to 3	4	13.3	18	60
4 to 6	20	66.6	10	33.3
7 to 10	5	16.6	2	6.6
More than 10	1	3.3	0	0
Total	30	100	30	100

Source: Primary data, December 2013 – January 2014

The table 6 indicates that only 13.3% sterilized families meet the government wish not to exceed three children whereas 76.7% sterilized families went beyond that maximum which is understandable as one of main reasons to choose an irreversible birth control method – vasectomy. The research found that among sterilized families there is a family which has 17 (3.3%) children born from different wives but living under dependence of their father and one wife, which means that this husband had a sound reason to opt for vasectomy. Among

sterilized families there were also families falling under the category of 7 – 10 children representing 16.6%, which also constitutes a sound reason to have chosen vasectomy.

Table 6 also evidences that more than a half of respondents (60%) met the government wish not to exceed three children per family, a sound reason not to have chosen vasectomy, among other reasons. 33.3% of non-sterilized families have more than three children whereas 6.6% of similar families have more than six children.

IV.1.2.3 Family planning methods and birth spacing

Non sterilized families use one or another method and might be assuring birth spacing as it would be the case for sterilized families.

The research demonstrated that 90% of non sterilized families, that is 27 respondents, use some birth control methods, whereas only 10%, that is, 3 respondents do not use birth control methods, a situation (low percentage) which should be understandable because there are some families who even have one (1) child with a will to get more (Primary data, December 2013 – January 2014).

Table 7: Non sterilized families’ used type of birth method

Type of birth method (per family)	Frequency	Percentage
Implantable rod (5 Years)	9	33.3
Injection (3 months)	5	18.5
Pills	7	25.9
Rhythm method and condom	2	7.4
Condom only	0	0
Female sterilization	3	11.1
Rhythm method only	1	3.7
Total	27	100

Source: Primary data, December 2013 – January 2014

In the questionnaire for non sterilized families’ used type of birth control (see appendix), this question was open and respondents gave specific methods they use as follows: implantable rods come first with 33.3% of respondents, pills in general occupy the 2nd position with

25.9%, 3 months injection 18.5%, female sterilization 11.1%, rhythm method and condom 7.4%, and rhythm method (natural) 3.7%.

Therefore, while vasectomy is still at its emerging stage, table 7 demonstrates that implantable rods (5 years), pills in general and 3 months injection are leading birth control methods in Rwanda.

In regards to birth spacing, collected data showed that birth spacing is not a real factor for vasectomy in sterilized families because 80% of them, that is 24 out of 30 targeted families, assure birth spacing, against only 20% standing for 6 sterilized families which do not assure birth spacing (Primary data, December 2013 – January 2014).

Surprisingly, non sterilized families assure a birth spacing rate which is under the sterilized families' rate, 75% against 80% respectively; which is once again evidence that birth spacing is not a vasectomy factor because it has already become a culture and observable in both sterilized and non sterilized families.

IV.2 Respondents' awareness and acceptability of vasectomy

Vasectomy as a new birth control method cannot be chosen by beneficiaries who are not aware of it. The present section presents first the level of vasectomy awareness before showing its level of acceptability.

IV.2.1 Vasectomy awareness

Transmitting information to vasectomy beneficiaries implies the use of various tools which include media, administrative, medical and health authorities, churches, NGOs, learning and similar institutions. In addition to these living and non-living tools, the table 8 presented below shows that the present research vasectomy beneficiaries got aware of vasectomy from more other ways: books, spouses, and sterilized brothers, neighbours and friends.

Table 8: Source of information on vasectomy for sterilized families

Source of information (per individual)	Frequency	Percentage
Media	26	43.3
Administrative authorities	0	0
Medical and Health authorities	24	40
Churches	0	0
Non Governmental Organizations	0	0
Learning institutions	0	0
Others		
Books reading	1	1.6
Sterilized neighbour (s)	3	5
A sterilized brother	1	1.6
Sterilized friend-families	3	5
From spouses	2	3.3
Total	60	100

Source: Primary data, December 2013 – January 2014

The above table shows that media, that is radio, TV, newspapers, Internet did a big job in facilitating reproductive community to know about vasectomy with 43.3% rate where Medical and Health authorities did the same at 40% rate. In an interview with medical experts in vasectomy, they told the researcher that this health sector percentage is mainly increased by the role played by community health workers (commonly known as *abajyanama b'ubuzima*) and social workers at health centres who teach various parents about family planning, vasectomy included.

For non sterilized families, not being subject to vasectomy does not necessarily mean not being aware of the existence of vasectomy as one among other birth control methods. In other words, non sterilized families did not choose vasectomy because they do not know it, because 93.3% representing 28 respondents said that they are aware of vasectomy, whereas only 6.6%, that is 2 respondents said that they heard about vasectomy when they met the researcher.

Table 9: Source of information on vasectomy for non sterilized families

Source of information	Frequency	Percentage
Media	15	53.5
Medical and Health authorities	13	46.5
Total	28	100

Source: Primary data, December 2013

As it has been the case for sterilized families, non sterilized ones also heard about vasectomy mainly through media, medical and health services at 53.5% and 46.5% respectively, this means that effort would be invested in these tools.

IV.2.2 Vasectomy acceptability

The present sub-section discusses factors surrounding the vasectomy acceptability, which also include reasons which lead to the initiation of the final decision to proceed to vasectomy, without leaving behind obstacles to vasectomy acceptability as negative factors.

IV.2.2.1 Factors leading to vasectomy acceptability

As the present study's literature introduced it, vasectomy is not only a new birth control method but also a male-focused one, which means that it is not easily accepted. Those men, who dare to be sterilized, do it because of some sound reasons listed in table 10.

Table 10: Factors leading to vasectomy acceptability

Source of information	Frequency	Percentage
A huge family	10	33.3
Children's better future	6	20
Poverty problems	0	0
Social problems	2	6.6
Poverty and Social problems	0	0
Poverty problems and children's better future	12	40
Total	30	100

Source: Primary data, December 2013 – January 2014

Responding to the closed question regarding factors leading to vasectomy acceptability, 40% families advanced poverty problems and children's better future, 33.3% advanced the factor of a huge family, 20% children's better future and 6.6% for social problems as factors. This might mean that the community's mindset is increasing whereby families want their children's better future prevail over vasectomy myths and male misconception vis-à-vis vasectomy as a male-focused birth control method.

Through open questions, sterilized families gave additional reasons for vasectomy acceptability. Sterilized HIV/AIDS positive families said that they accepted vasectomy to avoid having more children who they consider as more burden, in addition to HIV/AIDS related treatments and diets which are expensive compared to their income. They also said that they accepted vasectomy in order to avoid transmitting the HIV/AIDS to the new born.

Other respondents, especially women, said that they had failed to use hormonal methods because of their permanent side effects. Some even specified those methods like injections and pills which remain the most used birth control methods in Rwanda, after implantable rods (See table 7 of the present paper). In the same angle, some respondents said that they chose vasectomy after having been disappointed by other methods like the use of condoms and rhythm methods. For example, there is a family which had planned to give birth to only three (3) children, but accidentally got the 4th due to an unreliable method which this family had opted for.

Some other families chose vasectomy after facing consequences of excessive sexual misconduct including having many children with different mothers, needs of whom are hard to be sufficiently satisfied. Other families wanted to prioritize family primary needs satisfaction, school fees and health insurance for so many children and said that they could not reach those targets in case they do not choose a reliable birth control method.

Some husbands said that they accepted vasectomy in order to save their wives' lives against complications they had during their pregnancies and even delivery which complications had even led to so many sessions of surgery while delivering or before. In the same framework to save mothers' lives, some other husbands said that they accepted vasectomy due to advice

got from medical and health agents to stop delivering because of some incurable sicknesses in conflict with pregnancy and birth giving like diabetes.

Other respondents generally said that they were facing other problems like unemployment and that it was not good to get more children in such a situation. Others decided to undergo vasectomy because it is simple and more reliable to avoid unwanted births due to irregularities of other methods, as it had been the case when they were using other methods.

IV.2.2.2 Final decision to proceed to vasectomy

The decision to proceed to vasectomy may originate from the husband as it may originate from the wife.

The present study found that husbands have a big percentage in deciding vasectomy: 53.3% representing 16 respondents against 46.6% representing 14 of women's initiative (Primary data, December 2014 – January 2014).

While responding to open questions regarding the big step to accept vasectomy, respondents from sterilized families gave various reasons. There are for example some HIV positive families who said that it was not easy to combine HIV/AIDS pills and birth control pills taken by their wives. Instead, their husbands took the initiative to contribute to the birth control through stepping forward and thus accepting vasectomy. There is a husband who said that his wife has no more challenge to face both HIV/AIDS pains and birth control pills side effects. He even said that HIV/AIDS pains were worsened by birth control pills side effects. He assured that the family is now doing well because of his cold-blooded decision to accept vasectomy.

A respondent from Rulindo District said that the decision to undergo vasectomy was the last alternative to redress his life because he was living a total shadow, as well illustrated in the following testimony:

“I was used to pregnant women in an uncontrolled manner. I was turning around all widowed women. My wife could not tolerate such behaviour. That is why, at my home, there were permanent disputes

and poverty. I was very famous in my village as male sex worker. Afterwards, I got sick and went to Tumba Health Center where I was tested HIV/AIDS positive, around five years ago. I was advised to choose abstinence. But because I was not sure of honouring that I advise, I requested myself for being sterilized. But I believed that vasectomy would make me impotent, as it was my wish. Unfortunately, on one side, I have not become impotent. On the other side, with additional advice when undergoing vasectomy, I managed to peacefully cohabit with my wife, my children grew up, I manage to pay their school fees, I am stable in my home, contributing to the family socio-economic development. I advise fellow men to undergo vasectomy, to save our wives' lives. Vasectomy should be consider as a gender, women would not be encouraged to limit births alone, men would also be involved, not only in counselling and sensitization sessions, but also in birth control implementation like vasectomy operation. How can we get rich if we are putting a burden to the country through giving birth to an unlimited number of children?"

Some other male respondents said that they had been convinced that vasectomy is a better birth control method but kept resisting undergoing its operation until they got clinically advised by health agents. These respondents said that some times, health agents were using men who had been operated before to witness about the operation itself and their health status after operation. This helped them to dare taking the final decision to undergo a vasectomy operation, in their turn.

Mutual consultation between husbands and their wives was also another good tool used to help husbands taking the final decision to undergo vasectomy. Some women said that the mutual consultation helped them to convince their husbands that they will support them during and after operation and that most importantly they will remain loyal to them. The consultation was also embodying vasectomy benefits, both social and economic, instead of cohabiting with various threats, challenges and burdens caused by having or being exposed to having a big number of children whereas their families' economy was deplorable. Respondents said that this made husbands feel comfortable and led them to the final decision to accept being sterilized.

IV.2.2.3 Obstacles to vasectomy acceptability

According to information got from non sterilized families, they did not even try to opt for vasectomy because of some obstacles and myths. By assessing responses to open questions about obstacles to vasectomy acceptability, a good number of respondents have in common, obstacles like lack of awareness on vasectomy, its permanent character, religious beliefs, rumours and other myths.

There are obstacles to vasectomy acceptability that may be judged normal like the need to have children or more children for small sized families, the use of other birth control methods for families who are blessed with not having or having fewer side effects, on one side. On the other side, there are reasons that would be judged unsound preventing male from getting sterilized. For example, one family said: “being HIV/AIDS positive and thinking that one is about to die, there is no need to be sterilized because we do not plan to have any more birth”. This is unsound because even HIV/AIDS positive people can give birth to safe child. Respondents were also presenting the permanent character of vasectomy as another crucial obstacle. For example, some respondents said that they fear to lose their children and fail to get others because vasectomy is irreversible. Some other respondents even said that their religious beliefs oblige them not to accept any birth control method, vasectomy included.

In regards to myths, respondents who denied undergoing vasectomy said that that vasectomy is castration, that they had better refuting it instead of losing their sexual intercourse enjoyment. Some of these respondents were also discouraged by some rumours saying that vasectomy is a type of castration initiated by the Government of Rwanda to totally prevent husbands from wasting time in having or thinking about having sex with their wives, but rather aiming at working and not giving birth, because Rwanda is a too small country to shelter more children.

Besides castration as a rumouring obstacle to vasectomy, some more rumours associated vasectomy with politics. There is one respondent who, when asked if there was something to add on questionnaire responses, said he got information that vasectomy was initiated for the poor because rich people do not like children as poor citizens do. He even said that he got

this information from the media, more specifically on the British Broadcasting Corporation (BBC), and that therefore he cannot accept undergoing vasectomy.

Even though it has played a big role in informing the Rwandan reproduction population about vasectomy (see table 8 and 9 of the present paper), media is also an obstacle to vasectomy acceptability once used with bad faith to mislead the population. All mediatised allegations against vasectomy were refuted by men who have already undergone vasectomy and who said that vasectomy does not prevent them from enjoying sex as usual, that it is not castration, and that it was their own decision so as to be able to cater for health, education and economic challenges, among others, they were facing (See table 10 of the present paper and IV.2.3).

IV.2.3 Vasectomy implementation

The research intended to cover a 5 years period, that is from 2009 up to 2013, inclusive but, apart from information got from administrative and medical authorities as well as secondary data as discussed in the literature and which talk about vasectomy even before 2009, sterilized families who are subject to the present study are those ones sterilized in 2012 and 2013.

The research data show that 16 respondents were sterilized in 2013 representing 53.3%, whereas 46.6 % of the respondents were sterilized in 2012 (Primary data, December 2013–January 2014). This is good evidence that vasectomy constitutes a modern method of birth control in Rwanda and that its acceptability has the potential to improve.

Moreover, all 30 sterilized men (100%) said that they have not encountered any operation problem during their vasectomy implementation which makes it a safer, simpler and a more reliable method. This evidences that beliefs, myths and rumours presented as obstacles to vasectomy acceptability are baseless (See IV.2.2.3).

IV.3 Respondents' views on vasectomy effects

Respondents gave their views on vasectomy effects. Their views talk about health issues in terms of vasectomy side effects, socio-economic development issues and advice regarding vasectomy awareness and acceptability.

IV.3.1 Vasectomy side effects (health)

The study had questions specific to the views of respondent vis-à-vis myths and truths on vasectomy side effects. The study also collected views from non-sterilized families on probability to undergo vasectomy in a near or far future, regardless associated myths and rumours. This was because some families have not chosen vasectomy yet because they still need children and other similar positive reasons as exposed in vasectomy acceptability (See IV2.2.3).

IV.3.1.1 Respondents' views on vasectomy side effects: myths and truths

Respondents expressed their views regarding awareness on vasectomy truths, as potential witnesses who testify about their vasectomy experience. However, there are still persisting resistance towards vasectomy acceptability due to related myths observed on the side of non-sterilized families.

IV.3.1.1.1 Awareness on vasectomy truths

The research questionnaire had open questions about vasectomy truths and reality to which respondents gave various answers. These truths and realities are centred to the successfulness of vasectomy, fewer side effects and cost effectiveness.

Respondents said that for families with enough children, depending upon the family size they wish for, vasectomy is the best birth control method because it is fully reliable once sterilized

men have sex after the period recommended by the physician, after also having checked – up the completion of vasectomy operation.

Most importantly, respondents said that vasectomy reality is that it has fewer effects. Asked sterilized men even said that they did not encounter any side effects. This position is taken when vasectomy is compared to other birth control methods, as did one wife of the sterilized man:

“I had tried almost all other common birth control methods available in our region but failed to find a method suitable to my organism. I for example tried three months injections. This was making me so reluctant that I was not accepting sexual intercourse. I was having it to help my husband not to seek for that service elsewhere, but it was as if he was raping me. As I could not express any satisfaction, my husband was accusing me of having changed, but I knew, the problem was injections. I changed and took pills which also failed because sometimes, I could not swallow them at the exact time as instructed by the physician. I was even used to forget them which led to an unwanted pregnancy. After giving birth, I tried Norplant method. The physician placed a device in my arm. By that time, I was very happy saying that I will spend five years without any fear to get pregnant or sexually dissatisfy my husband. After a short period of time, side effects started appearing. I had a quasi-permanent headache, a continuous/ a nonstop female period so that my husband could not ask me anything at all (have sex) which became less compared to injections and pills. My husband decided to change the system and chose vasectomy. I am now safer than before and my husband did not suffer from anything, he is still physically and sexually fit. More importantly, no fear to pregnant me, we better enjoy our life (i.e. have sex) without any obstacle”.

Besides lack of side effects, respondents said that another vasectomy reality is that the family’s better economic planning is assured, as well as various socio-economic projects implementation. Vasectomy assures time to work and chases away fear of pregnancy. When wives are pregnant, they do not have time to work, they spend more than they produce. When they are not pregnant and their husbands are not sterilized, they have a challenge to face side effects of other birth control methods or they are not comfortable fearing to get pregnant, in case they have not chosen any method. Respondents furthermore said that another vasectomy reality is that no time and financial means are wasted in medical services for other birth control methods, side effects, children sickness, because vasectomy is done once for all, and that there are no more children and expenses thereto. In short, vasectomy helps women to

economically contribute to their families' development, to save and to have time to look after any development project of the household.

For families who are HIV/AIDS positive, the reality is that when husbands get sterilized, their wives do not face the problem to suffer from both HIV/AIDS pains and other birth control methods side effects. Respondents also said that vasectomy is better for old women and those ones who are tired of caesarean. A woman in Kinyinya sector witnessed that she was giving birth through caesarean and that the physician had advised her to stop it because she had maximized operation chances after the fifth operation and that further operations would be harmful to her life. This woman witnessed that she got saved by her husband who accepted to undergo vasectomy and made her forget about caesarean.

IV.3.1.1.2 Vasectomy myths

Some respondents mainly those ones who are not sterilized yet still have some myths in regards to vasectomy.

For example, some said that sterilization corresponds to castration and therefore make men impotent. Some others, while responding to open questions, they said that vasectomy might be associated with technical mistakes which can lead to reproduction and then giving birth to more children, reason why vasectomy should not be believed in (Primary data, December 2013 – January 2014).

In additional to technical myths, there are spiritual ones which say that vasectomy is against the will of God. For those who have such kind of belief, some Christians included, they still want to abide by the bible which says that people would multiply as many as stars and sands (Stopes, 2003). In their responses to the researcher, they said that those who opt for vasectomy may face the sanctions of God in that they violate His rules (Primary data, December 2013 – January 2014):

“I do not understand how a human being can get opposed to the rule of God. Man was created in the image of God. God is happy with how we are created but some of us are being sterilized as if God

failed to sterilize them. I think that vasectomy is worse than any other form of birth control because it is permanent whereas other methods can be stopped in order to pay a respect to God's rules".

However, those families who are sterilized do not share the same view, not only in regards to religious beliefs but also to technical issues, where they say that there is no issue for example of impotence, and that consequently, vasectomy is far from being compared to castration (Primary data, December 2013 – January 2014). One husband at Kinyinya Health Center told the researcher:

"I am not impotent. If you think I am lying, ask my wife, here you are! I can even disclose a secret that I had never enjoyed sex as I do today. I have no fear to make her pregnant and she feels safer, more protected against pregnancy. We have no more time to worry about pregnancy. I do not know what other men are waiting for".

For instance, when asked on impact of vasectomy on sexual intercourse, all 60 respondents (100%) from sterilized families, both husbands and wives, confirmed that vasectomy has no negative impact on sexual intercourse. Some even said that vasectomy rather increases their pleasure and enjoyment while making love because there is no fear of pregnancy (Primary data, December 2013 – January 2014).

IV.3.1.2 Future vasectomy acceptability

The researcher went further assessing the vasectomy acceptability by those families who are not sterilized yet.

Table 11: Future willingness to undergo a vasectomy by non sterilized families

Existence of a will to adhere to vasectomy in future	Frequency	Percentage
There is a will	8	26.6
No will	19	63.3
No position	3	10
Total	30	100

Source: Primary data, December 2013 – January 2014

Table 11 shows that 26.6% of respondents accept to undergo a vasectomy in future against 63.3% respondents who said they do not plan for accepting vasectomy. Only 10% were still hesitating on their position. Some of respondents said that they do not want vasectomy and presented their reasons whereas some others denied vasectomy without specifying the reason not to prefer it (Primary data, December 2013 – January 2014).

For those who plan for vasectomy acceptability, vasectomy is a better method because it is safer, more reliable and cost effective. Some female said they are even ready to convince their husband, for the same purpose. There is a couple who said that physicians have already convinced them to choose vasectomy because they are exposed to more pains and expenses as an HIV/AIDS positive family which does not want any more children. Some other respondents who accept to plan for undergoing a vasectomy in future said that they will yes do it but in case all other methods fail or when they will have got the number of children they wish for.

Among those who did not take any position in regard to a future vasectomy or not, some husbands said that they support sterilization, but a female one (tubal sterilization) and not vasectomy. This was interpreted by some female respondents as a male resistance to change and development (Primary data, December 2013 – January 2014). In Kimironko Sector, the researcher asked a wife of one of husbands who said that they prefer tubal sterilization to vasectomy, a wife who in turn seemed to support those husbands:

“Male sterilization is not a normal method. I have heard about tubal sterilized since 1990s and by that time there was no vasectomy. Where have it come from? This method is not good. When a wife is sterile, she can give permission to her husband to get married to another wife or to arrange himself to get a child from another woman and bring him/her in the family, instead of having a family without a child. This arrangement is commonly accepted in the Rwandan culture. On contrary, a wife is not permitted to get a child somewhere else when she is married and bring him/her to the family. Now, what if all children die when the husband has already been sterilized? Will the husband allow the wife to give birth to other children with any other man? Respond, please! Another crucial issue, women stops giving when they are aged around fifty (50), but men can pregnant a woman when they are even beyond seventy (70) years old. Look at what happened in 1990s: so many families lost their members in genocide and liberation war. What if such another kind of abominable event takes place, mass diseases like diarrhoea for example kill all children whereas the wife is in menopause? What would

happen if the husband is sterilized and the wife does no longer belong to the reproductive population? But if the husband were not sterilized, because there is no menopause for husbands, the husband would arrange himself to get a child somewhere else. That is why I will never support my husband to be sterilized! Instead, I would be sterilized in his place”.

The woman who prefers tubal sterilization to vasectomy seems to have primitive thoughts where, according to the history, people were giving birth to an unlimited number of children, catering for unforeseeable events like wars and diseases which would cause human losses. With such level of thinking, she cannot accept vasectomy; which means that she needs more interventions regarding life expectancy theory.

Those who do not wish to undergo a vasectomy had more views including not getting opposed to the God’s will, choosing other birth control methods and selecting vasectomy in case other methods fail. They also said that there some categories of people who would not be concerned by vasectomy, like widowed husbands because they are supposed to behave well and be exemplary towards sexual morality.

Other respondents who do not plan for undergoing vasectomy, they said that vasectomy would be thought about by families with enough or many children, whereas others similarly said that no vasectomy for young families and that in a family where there are only girls, vasectomy cannot work, because parents must keep trying their chance to get a boy or boys.

As it can be seen, views of non sterilized families still have technical, social and even spiritual reasons not to plan for vasectomy. However, these reasons seem to be primitive thoughts because, in civilized and most developed societies there is no discrimination between male and female kids and there is no need to give birth to many children. Therefore, it seems that male kids are still considered as superior to female children, a situation which is an obstacle to vasectomy present or future acceptability.

IV.3.2 Vasectomy contribution to the socio-economic development

Sterilized families witnessed the contribution of vasectomy to their socio-economic development, as hereunder detailed. They also share their socio-economic targets which they believe to translate into reality because of having chosen vasectomy.

IV.3.2.1 Recorded results and achieved targets because of vasectomy

Among other recorded results, there are family related achievements, general economy related performance, family and children's health related, patrimony increment, personal confidence and absence of promiscuous issues resulting from vasectomy.

IV.3.2.1.1 Family, education and health related achievements

Sterilized families said that they achieved a lot after a short period of time of their vasectomy. This include to find time for children education and discipline, celebrating marriages of their elder children, moving from one social and economic layer to another, from per example a farmer to a business person.

It is for that reason that some respondents said that all their children are studying some at university level, others in secondary and primary schools and the family is not afraid of additional children to take care of and that family expenses on children and sickness have reduced in a remarkable manner because of vasectomy.

In the same angle of family members linked achievements, while responding to open questions, some sterilized families expressed positive testimonies. For example, there is a husband from Gasabo District who said that his wife is well doing, has no more hormonal side effects and that their children are no longer permanently sick, because the family has time to look after them. Another witness expressed similar testimonies:

“We were living an ordinary life, my wife was struggling with other birth control methods side effects and I could not easily pay medical insurance to all my children, but right now health services are accessible and there is no more fear to go to seek for medical services. Sickness has also reduced, in a remarkable manner”.

Another sterilized husband testified as follows:

“My wife is now healthy and strong enough and capable to contribute to the family welfare whereas she was before depending on the husband. So, it is a good achievement resulting from vasectomy acceptance”.

Basing on these witnesses, one can conclude that vasectomy contributes to the improvement of family, education and health achievements of sterilized families’ members.

IV.3.2.1.2 Economic performance

In line with the general economy, sterilized families shared their success stories. For example, some respondents said that they got capacity to pay children’s fees and that those children are in their turn improving parents’ economic conditions”. Respondents residing in rural areas witnessed that they started receiving interests from their agribusiness and animal husbandry projects whereas without vasectomy they could not have reached such performance.

Other respondents witnessed that their patrimonies are increasing day per day. For example, some respondents said that they are buying land, home furniture, utensils and other materials. Others are dealing with house renovation because they have been capable to save money due to vasectomy which prevented them from getting other children and from spending money in their care or in health services due to side effects associated with other birth control methods (Primary data, December 2013 – January 2014).

Sterilized families went on discussing that they are now saving money and investing it in other activities and thus owning further equipments and patrimony, to increase their economy and the national economy as a whole (Primary data, December 2013 – January 2014).

IV.3.2.1.3 Personal confidence and promiscuous issues

Sterilized families say that they increased their personal confidence which prevent them from being involved promiscuous issues.

For instance, the same families witness that there is no more stress but rather capacity to plan and achieve targets without fearing future expenses, charges and children's numerous costs. These families say that before vasectomy, they were afraid of impotence but that now they feel okay and have confidence to work for their families and furthermore that they are proud to have saved the life of their wives (Primary data, December 2013 – January 2014).

In regards to how sterilized families managed to get rid of promiscuous issues, they say that they have already had a target, focus and aim while accepting vasectomy, as a couple that they were and are still convinced about vasectomy contribution to their welfare. They for example say that their sexual intercourse is safer and more enjoyable than before and that they work on their focus, and that there is no need to waste their time in adultery. They furthermore say that they believe in each other from their engagement period, reason why they still stand on their loyalty and that they cannot try being involved into sexual immoralities (Primary data, December 2013 – January 2014).

Contrarily to the belief and portrait of the general population, for a family to make a step and agree upon vasectomy is a good sign that the family understands each other, believe in each other and therefore cannot proceed to adultery or mutual sexual dissatisfaction, said some other families, adding that they are not really concerned with promiscuous issues. However, because they live in the world and not paradise, some other families say that mutual consultation must keep being done, to avoid a kind of overconfidence which can make men fall under adultery with hope that they will not make their accomplices pregnant (Primary data, December 2013 – January 2014).

IV.3.2.2 Further socio-economic targets

In addition to achievements made by sterilized families, the latter believe that they will also achieve more targets because of having accepted and undergone vasectomy.

When responding to open questions about additional targets, sterilized families said that they are busy strengthening their children's education and instruction and boosting familial economy. Especially for respondents residing in rural areas, sterilized families said that they plan to improve mechanized and modern agriculture and animal husbandry as a primary achievable target. Most of sterilized families residing in urban regions and some respondents from rural areas target to own more plots and land, to build houses, to upgrade their houses, to freely do business because there is time and expenses reduction on one side and saving increment, on the other side.

These targets constitute an indication of sterilized families' tranquillity which enables them to plan for a better future, based on actual achievements which are in turn resulting from vasectomy acceptability.

IV.3.3 Respondents' advice on vasectomy

Sterilized families suggested advice to the Government in general, to the health sector, to the married couples in general and to other women and men in particular.

IV.3.3.1 Respondents advice to the Government in general

When asked to give advice to the Government, respondents started rather in thanking the Government for having introduced the safest, simplest and most reliable method of family planning – vasectomy. They have invited the Government to invest more efforts in convincing other families to opt for vasectomy, through advocacy and sensitization (Primary data, December 2013 – January 2014).

IV.3.3.2 Respondents advice to the health sector

Sterilized families, respondents to the research questions also thanked the health sector for having operated them. They in addition advised to invest efforts in sensitizing other families about absence/inexistence of side effects because some men don't dare to accept vasectomy because they fear vasectomy operation effects which do not really exist, myths considered as a barrier to the development (Primary data, December 2013 – January 2014).

Sterilized families called upon health organs to use them as role models in vasectomy issues through using them vasectomy sensitization campaigns and similar sessions, organizing study trips in their homes to show non-sterilized families how their lives, social and economic conditions changed positively because of having undergone vasectomy (Primary data, December 2013 – January 2014).

IV.3.3.3 Respondents advice to the married couples in general

Sterilized families advise other married couples to dare accept vasectomy because its operation is simple, it is associated with no hormones, no side effects; it is a reliable method, that they should so adopt it (Primary data, December 2013 – January 2014).

They went on saying that mutual consultation should be initiated not only for non sterilized ones but also for sterilized families in order to limit birth and protect their lives against STIs and HIV AIDS and finally find time, means and confidence to run economic activities for their family's welfare. The consultation at issue should also extend and reach administrative and health authorities because the latter are capable to give better advice on how to live a healthy life and plan for their family, children and life for a better future and sustainable development. They also advised to avoiding adultery but focusing on the family's welfare, economy and development (Primary data, December 2013 – January 2014).

Advice provided to non sterilized families by sterilized ones, refer to their success stories after undergoing vasectomy. They encourage them to dare take the final decision to accept

vasectomy because they saw how its operation is simple, how vasectomy is a reliable method because it did not disappoint them and it is not associated with side effects as some other birth control methods.

Sterilized families have also other success stories to share in regards to their socio-economic improvements. They encourage non sterilized families to join them in planning for targets and achieving them as they did after undergoing vasectomy. These achievements include ability to cater for children needs, education, owning various properties like land, buildings and domestic animals.

IV.3.3.4 Respondents advice to women in general and wives in particular

In their families, women play a big social and economic role and to some extent, they may play more role than their husbands. For example, considering all development steps for a child, women are omnipresent. The female role at issue is mostly observed in pregnancy, child delivery and breastfeeding. Women also contribute to their children's basic education, instruction, school fees, children's discipline; they are almost totally responsible for their children basic needs which include discipline and education (Primary data, December 2013 – January 2014).

Therefore, sterilized families respondents of the research questions advised them to make a step and convince their husbands to accept vasectomy, so that all those attributions would be well assumed. These wives are also advised to convince their husbands showing them how they will socially and economically contribute to their households' development, once their husbands are sterilized (Primary data, December 2013 – January 2014).

Wives of sterilized husbands, based on their actual achievements without support from their husbands' sterilization, encourage women whose husbands have not yet undergone vasectomy to convince them to opt for, for them to reach similar targets. As it can be seen (Primary data, December 2013 – January 2014).

Even though vasectomy is a male-focused birth control method, sterilized men's wives said that it came as a solution to other birth control methods weaknesses which include side effects, obstacles to their free contribution to their households' development. Tubal sterilization, injections, IUDs, implantable rods and pills are all female focused birth control methods which vasectomy came to complement, and to prove that family planning is not female business only. That is why sterilized men's wives have reason to recommend fellow women, wives of non-sterilized men to make a step in convincing their husbands to undergo vasectomy.

IV.3.3.5 Respondents advice to men in particular

Sterilized families say that non sterilized men should support their wives, save their lives against death during mainly pregnancy and delivery, avoid hormones, bleeding, headache and other side effects associated with other birth control methods, through accepting vasectomy (Primary data, December 2013 – January 2014).

They also advised that once lives of non-sterilized men's wives are saved through undergoing vasectomy, their husbands will be rewarded through having active wives, contributing to their families' socio-economic development. This means that husbands have interests in accepting vasectomy as recommended by sterilized families.

Chapter V. FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The final chapter summarizes the study findings and then draws conclusions and makes recommendations.

V.1 Summary of findings

The research was carried out on a sample of one hundred respondents who include 30 sterilized men, their wives and 30 other respondents from non sterilized families. In addition to these 90 respondents, the researcher managed to have 10 health and administrative authorities on board who have vasectomy expertise and who therefore helped to harmonize information got from other respondents, interviews and observations.

The research found that more sterilized men were comprised in the adult category of the reproductive society, that is, men aged between 36 and 50 years, where they represent 73% of sterilized men who responded to the researcher's questions. Non sterilized men are mostly comprised in the youth category, aged 35 years and below, representing 70% of respondents to the research questions for non-sterilized families.

Concerning factors that may lead to vasectomy, the education factor was not found as conclusive because 60% of sterilized men did only primary education which is almost similar to the level of education of non sterilized families where 40% of them also did only primary education and 23.3% of them are illiterate against 10% of illiterate sterilized men. The research also found that 23.3% of sterilized men did secondary education against 16.6% of non sterilized families. The fact for these percentages to lack a reasonable difference may rather correspond to the national education status where more Rwandans did only primary education, without leaving behind another age-range of the community which remains illiterate.

The research found that the number of children is among the reasons pushing families to opt for vasectomy. For instance, only 13.3% of sterilized families match with the Government wish not to exceed three children per nuclear family whereas 86.7% of sterilized families gave birth to more than three children, which was presented by respondents (33.3%) as one

of main reasons to choose an irreversible birth control method – vasectomy. For non sterilized families, the research found that 60% of them gave birth to three children and less per family, against only 13.3% of sterilized families, a sound reason not to have chosen vasectomy, among other reasons, because they are still comprised in the small size category of nuclear families. However, birth spacing was not found a real factor for vasectomy because it is not assured in only 15% of sterilized families against 20% of non sterilized families.

The research revealed that 40% of families advanced poverty problems and children's better future as highest factors pushing to the final decision to accept vasectomy. 33.3% of them advanced the factor of a huge family, 20% said that it is because of children's better future and 6.6% of respondents said that the final decision is taken because of social problems. This might mean that the community's mindset is increasing whereby families want their children's better future prevail over vasectomy myths and male reluctance. For families who have already undergone vasectomy, their choice has even started presenting positive outcomes where their socio-economic life is improving day per day through being able to satisfy their children's needs like education, medical treatment, saving for them and owning various properties like land, houses and domestic animals.

Additional reasons advanced by respondents for accepting vasectomy included avoiding HIV/AIDS mother to kid transmission, avoiding the cohabitation of HIV/AIDS pains and side effects of hormonal birth control methods. They also advanced reasons to have failed to use all other methods, condoms and rhythm methods (natural) included. Some others accepted vasectomy to be able to prioritize family primary needs satisfaction, school fees and health insurance for their children, to tackle for economic problems like poverty and unemployment.

Concerning the source of vasectomy information, the research found that media (radio, TV, newspapers, Internet) did a big job in facilitating reproductive community to know about vasectomy with 43.3% rate, even though media is also used to spread rumours and myths against vasectomy. Medical and Health authorities also played a major role in raising

vasectomy awareness at 40% rate in sterilized families. Other communication tools scored only 16.7%: books, sterilized neighbours, families, friends and spouses. In the same angle of vasectomy awareness, only 6.6% of non sterilized families were not aware of vasectomy, by the time of research, which means that vasectomy is quite known, even though there is not enough deep information concerning how it is done and related impacts, good or bad.

The research found that non-sterilized families still have some myths in regards to vasectomy. For example, some said that sterilization corresponds to castration and therefore make men impotent. Some others said that vasectomy might present technical mistakes which can lead to reproduction and then give birth to more children. In addition to technical myths, there are spiritual ones which say that vasectomy is against the will of God for people to multiply in the whole world and that those who accept it may face the sanctions of God. Some cultural beliefs even led some wives of non-sterilized men to say that birth control methods should focus on only women, until saying that sterilizing men is more dangerous than tubal sterilization, because in case all children have died, the husband can at any age arrange himself to get other children from other women, whereas in case it is the husband who is sterilized, the wife cannot get other children anywhere else and that she can be in menopause which can lead to the disappearance of the family.

The research found that this is however contradicted by sterilized families who said they have not come across any of those myths and beliefs. Instead, they witnessed their success stories and future plans that they could not think about if they were not sterilized. This includes family tranquillity, loyalty and confidence resulting from mutual consultancies held even before undergoing vasectomy, whereas non-sterilized families lack homogeneity in their conducts and decision making. This also includes having enough time and resources to invest in their development projects, instead of investing in children's care, diseases treatment and similar expenses or time wasted and money lost in parents' treatment and care due to other birth control methods side effects.

V.2 Conclusions

This research found that the Rwandan reproductive community is aware of vasectomy as a male-focused birth control method but is not fully aware of its advantages and benefits against associated myths and rumours. In spite of those irregularities, the Rwandan reproductive community is little by little accepting vasectomy as the most reliable and effective birth method meant to contribute to the socio-economic development of the Rwandan households and the community as a whole. This is evidenced by a positive attitude demonstrated by all 60 (100%) respondents from sterilized families who did not highlight any negative impact of vasectomy, apart from the mere fact of being irreversible which cannot help to get other children when need be. This interrogation however is answered by the fact that vasectomy is opted for by those families who have the number of wanted children and who do not plan to have more others.

As far as real challenges of vasectomy acceptability is concerned, it should be concluded that lack of mobilization and enough information about vasectomy constitute the main challenge because vasectomy realities were indicated as more numerous than its myths and rumours which were advanced by non sterilized families, that is, impotence, castration, religious beliefs, male selfishness, accidental pregnancy and fearing vasectomy operations themselves. Solutions to these challenges are still associated with informing non sterilized families about vasectomy realities, if necessary using sterilized ones to share their success stories of all kind: health, sexual related, economic, education related and current confidence and future plans.

Concerning positive contribution of vasectomy to the Rwandan birth control system, it should be concluded that vasectomy is the best birth control method based on a good number of reasons. Except for the first three months meant for post-operation control, vasectomy does not necessitate further treatments as it for some other methods. Moreover, vasectomy is simple, cost effective, reliable and safer because it has no hormonal side effects. This said, sterilized families are free to deal with their socio-economic projects without burdens and challenges that are found in non-sterilized families like expenses on new kids' needs

satisfaction, medical treatment, maternal complications, deaths and related effects, other birth control methods side effects, lack of self-confidence and tranquillity and time used while dealing with those challenges.

This research concludes that vasectomy is a birth control method with many advantages and benefits to be privileged over all other methods, especially for families which do not need more children in line with the national family size preferences and strategies. Most importantly, vasectomy would be selected because it assures smooth running of familial and social life, and more valuably the economic development of households, why not of the country, as witnessed by sterilized families.

V.3 Recommendations

Based on the study findings, the researcher elaborated recommendations which are addressed to the administrative and health organs, sterilized families, wives of non sterilized men as well as non sterilized men. As the research could not cover all existing vasectomy issues, this section of recommendations ends in recommending specific further research.

V.3.1 To the Ministry of Health

The Ministry of Health made a good step while introducing, training medical staff, availing operation materials and campaigning for vasectomy. But there is still a lot to do, especially for the Rwandan reproductive population to be fully aware of vasectomy realities and accept it. Therefore, the Ministry of Health is recommended:

- To invest more efforts in sensitizing and therefore convincing more families to opt for vasectomy;
- To integrate sterilized families in awareness campaign and organize study trips in sterilized families to see how their familial, social and economic changed in support with vasectomy;

- To invest more effort in collaborating with the media, local administrative authorities and community health workers because it was found that they play the primordial role in informing the reproductive community about vasectomy.

V.3.2 To sterilized families

Sterilized families have a lot of success stories to share and a role to play in helping the Rwandan reproductive community to raise their vasectomy awareness and acceptability. That is why they are recommended:

- To advocate for vasectomy without necessarily waiting for the administrative and health organs' involvement and support;
- To testify about vasectomy truths against surrounding myths, beliefs and rumours tarnishing the image of vasectomy in the Rwandan reproductive community;
- For men, to avoid being involved in adultery with the mere myth not to make pregnant in order to avoid STIs and HIV/AIDS in their families.

V.3.3 To non sterilized men's wives

Whereas lots of birth control methods are female-focused, vasectomy is a male-focused method with a hybrid interest because it is technically co-benefited from by men and women. Men are operated but keep having their physical and physiological constituents. Women are not operated but they get rid of other birth control methods side effects, do no longer give birth, are not exposed to maternal death anymore and find time to work and plan for their families. For vasectomy to be accepted by their husbands so as to get benefit from its advantages, non sterilized men's wives are called upon:

- To make a step and strategically convince their husbands to accept vasectomy, so that women can have time to contribute to their families socio-economic development against permanent pregnancy, delivery, breastfeeding, basic education, school instruction, fees, discipline, illnesses, other birth control methods' side effects;

- To carry out strategic lobbying to administrative and health organs, and even sterilized families to help them convince their husbands in regard to vasectomy acceptance.

V.3.4 To non sterilized men

The research revealed that some large families do not choose vasectomy because of related myths and rumours, like saying that vasectomy is castration or a program initiated against only the poor. More unfortunately, these families do not express any courage to know about vasectomy realities. Thus, non sterilized men are recommended:

- To take part in their families' birth control system for their households socio-economic development through accepting vasectomy;
- To save the lives of their wives and children through accepting birth control method, without side effects, hormones, additional and permanent treatments and other stresses;
- To seek for advice about vasectomy realities from administrative and health authorities, and sterilized families, instead of believing on its unsound myths and rumours;
- To allow their wives contributing to the socio-economic life of their households through availing them but not letting them stuck by illnesses and medical care, but rather facilitating them time to work and plan for the family's future, through accepting vasectomy.

V.3.5 Further Research

The study could not cover all vasectomy issues. This is the reason why the researcher recommends further research on the following subjects:

- a. Acceptability attitudes rate between vasectomy and tubal sterilization as permanent birth control methods in the socio-economic perspective;
- b. Vasectomy campaign and advocacy strategies for a sustainable development of Rwandan families;
- c. Increasing male participation in birth control and spacing, and STDs prevention ownership through the familiarization of vasectomy and circumcision for sustainable Rwandan households' development.

The study on vasectomy as a development strategy within the Rwandan Family Planning Policy revealed that sterilized families have embarked on their way towards a sustainable socio-economic development, whereas non-sterilized large families are enslaved by vasectomy myths and rumours, in spite of their poverty, chronic children and wives sicknesses and despair. The study recommended various actors to cater for non sterilized families in order to raise their vasectomy awareness and acceptability for them to take part to the socio-economic development of themselves, their households and families, and of their nation. The study ended in recommending further research on non-covered vasectomy issues.

REFERENCES

Ayad Mohamed and Hong Rathavuth (2009), *Levels and Trends of Contraceptive Prevalence and Estimate of Unmet Need for Family Planning in Rwanda: Further Analysis of the Rwanda Demographic and Health Surveys 2000 – 2007/08*, Calverton, Maryland, USA, also available at http://pdf.usaid.gov/pdf_docs/PNADQ640.pdf, visited on Jan. 15th 2014.

BBC (2011), *Rwanda in vasectomy drive to stem population growth*, accessible at <http://www.bbc.co.uk/news/world-africa-12354464>, visited on Jan. 10th 2014.

Bloom E. David et al. (2001), *Economic growth and the demographic transition*, Cambridge, National bureau of economic research, December 2001, p. 2, available at http://www.econ.yale.edu/~nordhaus/Resources/bloometal_pop_w8685.pdf, visited on Jan. 13th 2014.

Burke Joseph Anthony et al. (2012), *The Contraceptive Revolution and the Second Demographic Transition: An Economic Model of Sex, Fertility, and Marriage*, Ave Maria University, 5050 Ave Maria Boulevard, USA, also accessible at <http://mysite.avemaria.edu/jburke/working-papers/WP1003-Burke-Pakaluk-Contraceptive-Revolution.pdf>, visited on April 06th 2014.

Frajzyngier, V., Bunce, A., et al. (2006), “Factors affecting vasectomy acceptability in the Kigoma region of Tanzania”, *E&R Study No. 5*, New York: The ACQUIRE Project/EngenderHealth.

Harrison F. Polly and Rosenfield Allan (1998), *Contraceptive Research, Introduction, and Use: Lessons from Norplant*, New York: National Academy Press, pp. 109 – 120, also accessible at http://www.accessbook.org/downloads/chapter_6_AccessBook.pdf, visited on Jan. 15th 2014.

Hirschman Charles (1981), *The uses of demography in development planning*, Vol. 29, n^o. 3, April 1981, University of Chicago, USA, p. 566, also available at <http://faculty.washington.edu/charles/new%20PUBS/A31.pdf>, visited on Jan. 13th 2014.

Holliday Graham and Hakizimana Themistocles (Sep. 6th, 2011), “Rwanda touts vasectomies to stem population growth”, in *Reuters*, accessed at <http://www.reuters.com/article/2011/09/06/ozatp-rwanda-vasectomies-idAFJOE7850KF20110906>, visited on Jan. 10th 2014.

Hope Foundation Rwanda (2013), *Youth Fertility Awareness*, available at <http://www.hfrwanda.org/>, visited on Jan. 15th 2014.

Hu Huiting (2002), “*Family Planning Law and China's Birth Control Situation*”, in *China through a lens*, accessed at <http://www.china.org.cn/english/2002/Oct/46138.htm>, visited on January 10th 2014)

ILO (2006), *Rwanda National Policy on Condoms*, accessed at http://www.ilo.org/wcmsp5/groups/public/@ed_protect/@protrav/@ilo_aids/documents/legaldocument/wcms_132562.pdf, visited on Jan. 15th 2014.

Joshi Shareen and Schultz T. Paul (2007), *Family Planning as an Investment in Development: Evaluation of a Program's Consequences in Matlab, Bangladesh*, Yale University, Yale and Chicago.

Kanimba Mansur (Aug. 2013), “Vasectomy proving a viable family planning method”, in *The New Times*, accessible at <http://www.newtimes.co.rw/news/index.php?i=15462&a=16423&week=35>, visited on Jan. 10th 2014.

Kennard Jerry (2006), “Withdrawal: An Ineffective Contraceptive Method”, in *Men's Health*, November 27, 2006, accessed at <http://menshealth.about.com/od/contraception/a/coitus.htm>, on April 06th 2014.

Kirsten Thompson (2014), *Birth Control, a Brief History of Birth Control*, accessed at <http://www.ourbodiesourselves.org/book/companion.asp?id=18&compID=53>, visited on April 06th 2014.

Kishori Mahat (2010), “Intention to Accept Vasectomy among Married Men in Kathmandu, Nepal”, in the *Asia Journal of Public Health*, January-June 2010, Vol. 1, no 1, Mahidol University, Bangkok, Thailand, (Journal Home page accessible at www.asiaph.org).

Labbok M et al. (1997), “Multicenter Study of the Lactational Amenorrhea Method (LAM), Efficacy, Duration and Implications for Clinical Application”, in *Contraception*, May/June 1997, 55:327-36, cited by ABM/Academy of Breastfeeding Medicine (2005), *Contraception during Breastfeeding*, available at www.bfmed.org/Resources/Download.aspx?filename=protocol_13.pdf, visited on April 06th 2014.

Law n° 42/1988 of 27 October 1988 establishing the preliminary title and the Civil Code Book One (CCB I)

Lusiola Grace, et al (June 2006), *Factors Affecting Vasectomy Acceptability in the Kigoma Region of Tanzania*, A report for the “The Acquire Project/Tanzania”, accessible at http://www.engenderhealth.org/files/pubs/acquire-digital-archive/11.0_research_studies/er_study_5.pdf, visited on Ap. 06th 2014.

MIGEPROF (July 2007), *Single report equal to fourth, fifth and sixth reports on the implementation of the convention on the elimination of all forms of discrimination against women*, pp. 8 – 9 (also available at http://www.migeprof.gov.rw/IMG/pdf/CEDAW_Report-2.pdf, visited on January 10th 2014)

MINECOFIN (2002), *Vision 2020*, Final draft, Kigali, Rwanda, p. 26, § 91

MINECOFIN (2013), *EDPRS II 2013 – 2018*, Final version, Kigali, Rwanda, also accessible at http://www.minecofin.gov.rw/fileadmin/General/EDPRS_2/EDPRS_2_FINAL1.pdf, visited on Jan. 15th 2014.

Muhondwa Eustace and Rutenberg Naomi (1997), *A study of the effects of the vasectomy promotion project on knowledge, attitudes, and behaviour among men in Dar Es Salaam*, The Population Council, accessed at pdf.usaid.gov/pdf_docs/PNACE476.pdf, visited on April 06th 2014.

Muhoza Ndaruhuye Dieudonné et al (2013), *Measuring the Success of Family Planning Initiatives in Rwanda: A Multivariate Decomposition Analysis*, USAID, Kigali, Rwanda (also accessible at <http://www.measuredhs.com/pubs/pdf/WP94/WP94.pdf>, visited on January 10th 2014).

Mukakarara Viviane, *Family Planning Task-Shifting in Rwanda: Increasing Availability of Services by Training Nurses to Insert Intrauterine Devices (IUDs)*, Intra-health International, December 2011, p. 5.

Murthy S. Ram and Rao M. Dharma (2003), “An analysis of factors influencing the acceptability of vasectomy in Andhra Pradesh”, *Health and Population*, India, Perspectives and Issues 26 (4): 162-182.

Ndaruhuye Muhoza Dieudonné (2009), “Demand and Unmet Need for Means of Family Limitation in Rwanda”, in the *International perspectives on sexual and reproductive health*, Volume 35, Number 3, available at <https://www.guttmacher.org/pubs/journals/3512209.html>, April 06th 2014.

NISR (2010), *Rwanda continues to achieve the MDGs, DHS 2010*, Kigali, Rwanda, accessible at <http://www.statistics.gov.rw/publications/article/rwanda-continues-achieve-mdgs>, retrieved on Jan. 15th 2014.

NISR (March 2014), *2012 Population and Housing Census*, Thematic Report, Kigali, Rwanda, available at <http://statistics.gov.rw/publications/rphc4-thematic-report-population-size-structure-and-distribution>, retrieved on Ap. 06th 2014.

NISR (Nov. 2012), *2012 Population and Housing Census*, Provisional Results, Kigali, Rwanda.

Niwemahoro C. (2011), “Fertility Preferences and Level of Family Planning in Rwanda: Case of Huye District”, In the *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)* 2(3): 168-174, Scholarlink Research Institute Journals, 2011 (ISSN: 2141-7024).

Nsengiyumva Théophile & Shattuck Dominick, “Monitoring the Scale-Up of Vasectomy in Rwanda: Preliminary Results”, February 13, 2013, Washington D.C., in the *Science of improving lives / FHI and USAID*, accessible at <http://www.fhi360.org/sites/default/files/media/documents/no-scalpel-vasectomy-rwanda.pdf>, retrieved on Jan. 10th 2014.

Peery I. Annette (1999), *Vasectomy*, Eastern Carolina Family Practice Centre, available at <http://www.ecu.edu/cs-dhs/fammed/customcf/resources/men/vasectomy.pdf>, visited on Jan. 13th 2013.

Phumaphi Joy (2011), *Family Planning and Economic Growth*, CFR, New York.

Ronald Lee (2003), “The Demographic Transition: Three Centuries of Fundamental Change”, in the *Journal of Economic Perspectives*—Volume 17, Number 4—Fall 2003—Pages 167–190, accessed at <http://www.econ.umn.edu/~guvenen/paper6.pdf>, visited on April 06th 2014.

Ronald Lee (2009), “*New Perspectives on Population Growth and Economic Development*”, Departments of Demography and Economics, University of California at Berkeley USA, a *Report* prepared for UNFPA plenary session on After Cairo: Issues and Challenges IUSSP Marrakech, 2009 (also available at <http://www.ceda.berkeley.edu/Publications/pdfs/rlee/UNFPANewPerspectives09.pdf>, visited on January 10th 2014).

Saoji Ajeet et al (2013), “Denial Mode for Vasectomy among Married Men in Central India: Causes and Suggested Strategies”, Research article, in *Psychology & Psychotherapy*, Department of Community Medicine, NKP Salve Institute of Medical Sciences and Research Center, Nagpur, India.

Saunders (2007), “Pregnancy”, Dorland's Medical Dictionary for Health Consumers, an imprint of Elsevier, available at <http://medical-dictionary.thefreedictionary.com/Pregnancy>, visited on Jan. 13th 2014.

Saunders (2008), “Vasectomy”, Dorland's Medical Dictionary for Health Consumers, an imprint of Elsevier, available at <http://medical-dictionary.thefreedictionary.com/vasectomy>, visited on Ap. 06th 2014.

Schramm Noemi (2011), *Population-Control-Policies and their Implications for Economic Growth in China*, Thesis, University of Zurich, Switzerland, also available at http://www.econ.uzh.ch/ipcdp/theses/BA_NoemiSchramm.pdf, visited on Jan. 13th 2013.

Schultz, T. P. (2005), *Population Policies, Fertility, Women’s Human Capital , and Child Quality*, Elsevier, Amsterdam.

Sibomana Sylvain (2011), “RPF regime in a mass vasectomy bid targeting the poor”, in the *Great Lakes Democracy* of 06th Feb. 2011, accessed at <http://greatlakesdemocracy.blogspot.com/2011/02/rpf-regime-in-mass-vasectomy-bid.html> , on April 06th 2014.

Sokal C. David and Labrecque Michel (2009), *Effectiveness of Vasectomy Techniques*, FHI, Elsevier Inc., USA & Canada, p. 317.

Songhai Barclift (2012), *Douching fact sheet*, U.S. Department of Health and Human Services, Health Resources and Services Administration, HIV/AIDS Bureau, Washington, available at <http://womenshealth.gov/publications/our-publications/fact-sheet/douching.html>, visited on April 06th 2014.

Stockwell, Edward (1962), *The Relationship between Population Growth and Economic Development*, American Sociological Review v.000:00-00 cited by Schwirian, Kent P. (1969), “Population Growth, Economic Development, and Population Control Programs”, in *Ohio Journal of Science*: Volume 69, Issue 1, January 1969, also accessible at

https://kb.osu.edu/dspace/bitstream/handle/1811/5439/V69N01_002.pdf, visited on April 06th 2014.

Stopes Marie (2003), *Views on vasectomy: the male perspective*, Marie Stopes International, London, UK.

The American College of Obstetricians and gynecologists, *Sterilization by Laparoscopy, frequently asked questions on contraception*, retrieved at <http://www.acog.org/~media/For%20Patients/faq035.pdf?dmc=1&ts=20140113T1000342012>, visited on Jan. 13th 2013.

Turek Paul, “Vasectomy and Other Contraceptives”, accessible at <http://theturekclinic.com/services/vasectomy/vasectomy-vs-other-contraceptives-male-birth-control/#sthash.v5WHsw5h.dpuf>, visited on Jan. 16th 2014.

Tyjen Tsai (2011), *Vasectomy an Option for African Men in Family Planning*, accessed at <http://www.prb.org/Publications/Articles/2011/africa-vasectomy.aspx>, on April 06th 2014.

U.S. Department [of Health and Human Services, Office on Women’s Health], *Birth control methods*, November 21, 2011, p. 2, available at <http://www.womenshealth.gov/publications/our-publications/fact-sheet/emergency-contraception.pdf>, visited on Jan. 15th 2014.

UNFPA (2007), *Family planning and poverty reduction benefits for families and nations*, accessed at https://www.unfpa.org/rh/planning/mediakit/docs/new_docs/sheet4-english.pdf, visited on April 06th 2014.

UNFPA (2011), *Sub-Saharan Africa, Global and Regional Program, 2008–2011*, accessible at <http://www.unfpa.org/worldwide/africa.html>, visited on January 10th 2014.

US Department of Health and Human Services, Office of Women’s Health (2014), *Birth control methods fact sheet*, accessible at <https://www.womenshealth.gov/publications/our-publications/fact-sheet/birth-control-methods.html>, visited on April 06th 2014.

Van der Wijden C, et al. (2008), *Lactational amenorrhea for family planning*, in The Cochrane Library, 2008, Issue 4, accessed at <https://researchspace.auckland.ac.nz/bitstream/handle/2292/9051/10.1002-14651858.CD001329.pdf%3Fsequence%3D4>, on April 06th 2014.

Weissman D. Wayne (2013), *Post-operative instructions for vasectomy*, available at http://www.vasectomycenter.com/pdf/post_vas_instructions.pdf, visited on January 15th 2014.

White Kevin (2006), *The SAGE dictionary of health and society*, SAGE Publications Inc., California, USA, p. 81 also available at <http://books.google.rw/books?id=PSWa9M0yoeQC&pg...>, visited on Jan. 13th 2014.

WHO (2013), *Family planning*, retrieved at http://www.who.int/topics/family_planning/en/, visited on January 13th 2014.

APPENDICES

Pictures of the research areas



Kibagabaga Hospital



Tare Health Center (Rulindo District, Bushoki Sector)

Questionnaires

I. QUESTIONS FOR STERILIZED MEN / *IBIBAZO BIGENEWE ABAGABO BIFUNGISHIJE BURUNDU*

A. Respondents Identification / *Umwirondoro w'usubiza*

1. Address (Residence):

(a) Cell _____ (b) Sector _____

Aho atuye Akagali Umurenge

(c) District _____ (d) Province/Kigali City _____

Akarere Intara/Umujyi wa Kigali

2. Age of the respondent: _____

Imyaka y'usubiza? _____

3. What is your level of education?

Amashuri wize?

(a) None (b) Primary

Ntayo Amashuri abanza.

(b) Secondary (d) University

Amashuri yisumbuye Kaminuza

B. Family status / *Amakuru arebana n'umuryango*

4. Civil Status: Are you / *Irangamimerere:*

a. Married / *Warasezeranye imbere y'amategeko?*

b. Divorced / *Wahawe gatanya?*

c. Widowed / *Warapfakaye?*

d. Concubine (Informal cohabitation) / *Mubana nk'umugore n'umugabo, ariko ntimwashyingiwe mu mategeko?*

e. Single / *Uri ingaragu?*

5. How many children have you got? *Ufite abana bangahe?*
6. Is there any planned birth spacing among your children? *Abana banyu ni indahekana cg si zo?*

C. Vasectomy factors /*Icyabateye kwifungisha burundu*

7. Which is the main motive to proceed to vasectomy / *Ni iyihe mpamvu nyamukuru yatumye wifungisha burundu?*
 - a. A huge family / *Umuryango munini*
 - b. It was a standard family but we opted for birth control for a better planning our child (ren) / *umuryango wari uringaniye ariko twari dufite ingamba yo kuringaniza urubyaro kugira ngo tubashe guteganyiriza abo twari tumaze kubona*
 - c. It was a standard family but we had poverty problems / *umuryango wari uringaniye ariko twari dufite ibibazo by'amikoro*
 - d. It was a standard family but we had social problems / *umuryango wari uringaniye ariko twari dufite ibibazo by'imibanire*
8. Are there other reasons which motivated you to proceed to vasectomy *Hari izindi mpamvu zaba zaratumye wifungisha burundu ?*
 - a. Yes / *Yego*
 - b. No / *Oya*
9. If there are other reasons, please mention them / *Hari hari izindi mpamvu zivuge:*
 - a. _____
 - b. _____
 - c. _____
 - d. _____

D. Vasectomy awareness and acceptability / *Ubumenyi ku bijyanye no kwifungisha burundu n'icyabataye gutinyuka kwifungisha burundu no kubyakira*

10. Where did you get information regarding vasectomy? / *Amakuru arebana no kwifungisha burundu mwayakuye he?*

- a. Media / *Mu bitangazamakuru*
- b. Administrative authorities / *Mu bayobozi b'Inzego z'Ibanze*
- c. Medical and Health Authorities / *Mu bayobozi b'inzego z'ubuzima*
- d. Churches / *Mu nsengero*
- e. Non Governmental Organizations / *Mu miryango itari iya Leta*
- f. Learning institutions / *Mu mashuri*
- g. Elsewhere / *Ahandi, havuge:*

i. _____

ii. _____

iii. _____

iv. _____

11. What did make you accept to be sterilized / *Ni iki cyagutinyuye kwemera kwifungisha burundu?*

- a. Testimony from fellow men who got sterilized / *Ubuhamya ku Bagabo bifungishije burundu mbere yanjye;*
- b. Medical advice / *Inama za muganga;*
- c. Determination / *Kwiyemeza, gushirika ubwoba*
- d. Birth control attitude / *Umutima wo kuringaniza urubyaro;*
- e. Other reasons? Mention them / *Hari izindi mpamvu? Zivuge*

i. _____

ii. _____

iii. _____

iv. _____

E. Vasectomy implementation / kwifungisha burundu nyirizina

12. When did you get sterilized? / Wifungishije ryari (Umaze igihe kingana iki wifungishije)?

13. Where did you get sterilized? / Wifungishirije he?

14. Did you encounter any problem during the sterilization operation? / Hari ikibazo wagize mu gihe abaganga bari mu gikorwa cyo kugufunga burundu?

a. Yes /Yego

b. No / Oya

c. If yes, what happened? Niba gihari, ni ikihe?

i. _____

ii. _____

iii. _____

iv. _____

15. Did you encounter any problem after the sterilization operation? / Nyuma yo kwifungisha, hari ikibazo wagize?

a. Yes /Yego

b. No / Oya

c. If yes, what happened? Niba gihari, ni ikihe?

i. _____

ii. _____

iii. _____

iv. _____

F. Vasectomy effects / ingaruka (inziza n'imbi) zo kwifungisha burundu

16. Has vasectomy negatively impacted on sexual intercourse with your partner? / Hari icyo kwifungisha byahungabanyije ku bijyanye n'igikorwa cy'imibonano mpizabitsina n'uwo mwashakanye?

a. Yes /Yego

b. No / Oya

c. If yes, what happened? *Niba gihari, ni ikihe?*

- i. _____
- ii. _____
- iii. _____
- iv. _____

17. List the positive results from your vasectomy / *Dusangize ibyiza wagezeho ubikesha kwifungisha burundu:*

a. Issues that concern the family / *Ibirebana n'umuryango*

- i. _____
- ii. _____
- iii. _____
- iv. _____

b. General economy issues / *Ibirebana n'ubukungu muri rusange*

- i. _____
- ii. _____
- iii. _____
- iv. _____

c. Family and children's health issues / *Ibirebana n'ubuzima bw'umuryango muri rusange n'abana by'umwihariko*

- i. _____
- ii. _____
- iii. _____
- iv. _____

d. Patrimony issues / *Ibirebana n'imitungo*

- i. _____
- ii. _____
- iii. _____
- iv. _____

e. Education issues / *Ibirebana n'uburezi n'imyigire y'abana*

- i. _____
- ii. _____
- iii. _____
- iv. _____

f. Personal confidence / *Ibirebana no kzigirira icyizere ubikesha kwifungisha burundu*

- i. _____
- ii. _____
- iii. _____
- iv. _____

g. Promiscuous issues / *Ibirebana n'akato gashingiye ku mibonano mpuzabitsina cyangwa se no kwirara kubera ko nta bwoba bwo gutera inda*

- i. _____
- ii. _____
- iii. _____
- iv. _____

18. Are there positive results that you still plan to achieve from your vasectomy? / *Hari ibyiza uteganya kugeraho ubikesha kwifungisha burundu?*

- i. _____
- ii. _____
- iii. _____
- iv. _____

19. What do you think would have been your loss if you had not had vasectomy? / *Ni iki ubona wari guhomba iyo utifungisha burundu?*

- i. _____
- ii. _____
- iii. _____
- iv. _____

20. What did you lose and regret because of sterilization? / *Ni iki wahombye kandi wicuza kubera kwifungisha burundu?*

- i. _____
- ii. _____
- iii. _____
- iv. _____

21. Which advice could you give in regard to vasectomy? / *Ni izihe nama watanga ku birebana no kwifungisha burundu?*

a. Advice to the Government in general / *Inama kuri Leta muri rusange*

- i. _____
- ii. _____
- iii. _____
- iv. _____

b. Advice to the health sector / *Inama ku Nzego z'Ubuzima by'umwihariko*

- i. _____
- ii. _____
- iii. _____
- iv. _____

c. Advice to the married couples in general / *Inama ku miryango y'abashakanye / ingo muri rusange*

- i. _____
- ii. _____
- iii. _____
- iv. _____

d. Advice to women in general and wives in particular / *Inama ku bagore muri rusqng n'abagore bubatse by'umwihariko*

i. _____

ii. _____

iii. _____

iv. _____

e. Advice to men in particular / *Inama ku Bagabo by'umwihariko*

i. _____

ii. _____

iii. _____

iv. _____

Thank you / Murakoze

**II. QUESTIONS FOR WIVES OF STERILIZED MEN / IBIBAZO BIGENEWE
ABAGORE B'ABAGABO BIFUNGISHIJE BURUNDU**

A. Respondents Identification /Umwirondoro w'usubiza

1. Address (Residence):

(a) Cell _____ (b) Sector _____

Aho atuye Akagali Umurenge

(c) District _____ (d) Province/Kigali City _____

Akarere Intara/Umujiyi wa Kigali

2. Age of the respondent: _____

Imyaka y'usubiza? _____

3. What is your level of education?

Amashuri wize?

(c) None

(b) Primary

Ntayo

Amashuri abanza.

(d) Secondary

(d) University

Amashuri yisumbuye

Kaminuza

B. Family status / Amakuru arebana n'umuryango

4. Civil Status: Are you / Irangamimerere:

a. Married / Warasezeranye imbere y'amategeko?

b. Divorced / Wahawe gatanya?

c. Widowed / Warapfakaye?

d. Concubine (Informal cohabitation) / Mubana nk'umugore n'umugabo, ariko
ntimwashyingingiwe mu mategeko?

e. Single / Uri ingaragu?

5. How many children have you got? *Ufite abana bangahe?*
6. Is there any planned birth spacing among your children? *Abana banyu ni indahekana cg si zo?*

C. Your husband's vasectomy factors / *Icyateye umugabo wawe kwifungisha*

burundu

7. Which is the main motive for your husband to proceed to vasectomy / *Ni iyihe mpamvu nyamukuru yatumye umugabo wawe yifungisha burundu?*
 - a. A huge family / *Umuryango munini*
 - b. It was a standard family but we opted for birth control for a better planning of our child (ren) / *umuryango wari uringaniye ariko twari dufite ingamba yo kuringaniza urubyaro kugira ngo tubashe guteganyiriza abo twari tumaze kubona*
 - c. It was a standard family but we had poverty problems / *umuryango wari uringaniye ariko twari dufite ibibazo by'amikoro*
 - d. It was a standard family but we had social problems / *umuryango wari uringaniye ariko twari dufite ibibazo by'imibanire*
 - e. As a wife, I had bio-physiological problems preventing me from giving birth to a child / *Nari imfite ibibazo mu buzima bw'imyorororekere bitanyemerera kongera kubyara*

8. Are there other reasons which motivated your husband to proceed to vasectomy *Hari izindi mpamvu zaba zaratumye wifungisha burundu ?*
 - a. Yes / *Yego*
 - b. No / *Oya*

9. If there are other reasons, please mention them / *Hari hari izindi mpamvu zivuge:*
 - a. _____
 - b. _____
 - c. _____
 - d. _____

D. Initiative to proceed to vasectomy and its acceptability / Aho igitekerezo ku bijyanye no kwifungisha burundu cyavuye n'icyabateye kubyakira

10. Where did you get information regarding vasectomy? / Amakuru arebana no kwifungisha burundu mwayakuye he?

- a. Media / Mu bitangazamakuru
- b. Administrative authorities / Mu bayobozi b'Inzego z'Ibanze
- c. Medical and Health Authorities / Mu bayobozi b'inzego z'ubuzima
- d. Churches / Mu nsengero
- e. Non Governmental Organizations / Mu miryango itari iya Leta
- f. Learning institutions / Mu mashuri
- g. Elsewhere / Ahandi, havuge:

i. _____

ii. _____

iii. _____

iv. _____

11. Who introduced the idea of vasectomy to your family, between you and your husband? / Hagati yawe n'umugabo wawe, ni nde wazanye igitekerezo cyo kwifungisha burundu?

- a. The wife / Umugore
- b. The husband / Umugabo

12. If the initiative is yours, which are main points you advanced to convince your husband for vasectomy? / Niba ari wowe wazanye igitekerezo cyo kwifungisha burundu, ni iki wakoze kugira ngo umugabo wawe abyemere?

13. If the initiative is your husband's, which are main points did he advance to convince you to accept his vasectomy? / *Niba ari umugabo wawe wazanye igitekerezo cyo kwifungisha burundu, ni iki yakoze kugira ngo ubyemere?*

E. Vasectomy effects / ingaruka (inziza n'imbi) zo kwifungisha burundu

14. Has your husband's vasectomy negatively impacted on sexual intercourse with him? / *Hari icyo kwifungisha byahungabanyije ku bijyanye n'igikorwa cy'imibonano mpizabitsina n'uwo mwashakanye?*

- a. Yes / *Yego*
- b. No / *Oya*
- c. If yes, what happened? *Niba gihari, ni ikihe?*

- i. _____
- ii. _____
- iii. _____
- iv. _____

15. List the positive results from your husband's vasectomy / *Dusangize ibyiza wagezeho ubikesha kwifungisha burundu k'umugabo wawe:*

Are there additional positive results that you still plan to achieve from your husband's vasectomy? If yes, mention them / *Hari ibindi byiza muteganya kugeraho mubikesha kwifungisha burundu? Niba bihari, mubivuge:*

- i. _____
- ii. _____
- iii. _____
- iv. _____

16. What do you think would have been your loss if your husband had not had vasectomy? / *Ni iki ubona wari guhomba iyo u,ugabo wawe atifungisha burundu?*

- i. _____
- ii. _____
- iii. _____
- iv. _____

17. What did you lose and regret because of your husband's vasectomy? / *Ni iki mwahombye kandi mwicuza kubera kwifungisha burundu k'umugabo wawe?*

- i. _____
- ii. _____
- iii. _____
- iv. _____

18. Which advice could you give to your fellow spouses in regard to vasectomy? / *Ni izihe nama waha abubatse ingo ku birebana no kwifungisha burundu?*

Thank you / Murakoze

**III. QUESTIONS FOR NON STERILIZED FAMILIES / IBIBAZO BIGENEWE
IMIRYANGO IDAKOresha UBURYO BWO KWIFUNGISHA BURUNDU**

A. Respondents Identification /Umwirondoro w'usubiza

1. Address (Residence):

(a) Cell _____ (b) Sector _____

Aho atuye Akagali Umurenge

(c) District _____ (d) Province/Kigali City _____

Akarere Intara/Umujyi wa Kigali

2. Age of the respondent: _____

Imyaka y'usubiza? _____

3. Sex of the respondent / *Igitsina cy'usubiza* :

a. Male / *Gabo*

b. Female / *Gore*

4. What is your level of education?

Amashuri wize?

(e) None

Ntayo

(f) Secondary

Amashuri yisumbuye

(b) Primary

Amashuri abanza.

(d) University

Kaminuza

B. Family status / Amakuru arebana n'umuryango

5. Civil Status: Are you / *Irangamimerere*:
- a. Married / *Warasezeranye imbere y'amategeko?*
 - b. Divorced / *Wahawe gatanya?*
 - c. Widowed / *Warapfakaye?*
 - d. Concubine (Informal cohabitation) / *Mubana nk'umugore n'umugabo, ariko ntimwashyingiwe mu mategeko?*
 - e. Single / *Uri ingaragu?*
6. How many children have you got? *Ufite abana bangahe?*
7. Is there any planned birth spacing among your children? *Abana banyu ni indahekana cg si zo?*
8. Are you using any family planning method? / *Hari uburyo bwo kuringaniza urubyaro mwaba mukoresha?*
- a. Yes / *Yego*
 - b. No / *Oya*
 - c. If yes, which method? / *Niba ari yego, mukoresha ubuhe buryo?*

 - d. If no, why there is no family planning method applied in your family? / *Niba ari oya, ni iyihe mpamvu ituma umuryango wanyu udakoresha uburyo bwo kuringaniza urubyaro?*

C. Vasectomy awareness and acceptability / *Ubumenyi ku bijyanye no kwifungisha burundu n'icyabateye gutinyuka kwifungisha burundu no kubyakira*

9. Did you hear about vasectomy as one of family planning methods? / *Mwaba muzi ko habaho uburyo bwo kuringaniza urubyaro bwo kwifungisha burundu?*

a. Yes / *Yego*

b. No / *Oya*

c. If yes, where did you get that information? / *Niba ari yego, ni he mwakuye amakuru ?*

10. Did you try to opt for vasectomy in your family? *Mwaba mwaragerageje guhitamo uburyo bwo kwifungisha burundu?*

a. Yes / *Yego*

b. No / *Oya*

c. If yes, why your family did not manage to be subject to vasectomy? / *Niba ari yego, ni iki cyatumye hatabaho kwifungisha burundu mu muryango wanyu?*

11. Did your partner refuse the introduction of vasectomy your family? *Uwo mwashakanye yaba yarabangiye ko muhitamo uburyo bwo kwifungisha burundu mu muryango wanyu?*

a. Yes / *Yego*

b. No / *Oya*

- c. If yes, which reasons did your partner advance to refute vasectomy? / *Niba ari yego, ni izihe mpamvu zateye uwo mwashakanye kwanga ko uburyo bwo kwifungisha burundu bukoreshwa mu muryango wanyu?*

D. Vasectomy effects / *ingaruka (inziza n'imbi) zo kwifungisha burundu*

12. What do you think are positive results of vasectomy? / *Ni ibihe byiza byo kwifungisha burundu waba uzi ?*

13. What do you think are negative results of vasectomy? / *Ni ibihe bibi byo kwifungisha burundu waba uzi ?*

14. Do you think you may want to try Vasectomy in the future? *Ese mwaba muteganya kuyoboka gahunda yo kwifungisha burundu?*

- a. Yes / *Yego*
b. No / *Oya*
c. If “yes” or “No” Why? / *Ni iyihe mpamvu ituma mubiteganya cyangwa se mutabiteganya?*

Thank you / Murakoze

IV. QUESTIONS FOR ADMINISTRATIVE AND HEALTH AUTHORITIES

A. Respondents Identification

1. Address (Residence):

(a) Cell _____ (b) Sector _____

(c) District _____ (d) Province/Kigali City _____

2. Age of the respondent: _____

3. What is your level of education?

a) Secondary

b) University / Higher Learning Education

4. About your occupation:

a. Institution : _____

b. Position : _____

B. Vasectomy awareness, acceptability and implementation

5. Are your clients aware of vasectomy?

a. Yes

b. No

c. If no, why they are not aware?

6. Which mechanisms do you use to make your clients aware of vasectomy?

7. Are there cases where some spouses accuse their partners not to accept vasectomy?

- a. Yes
- b. No
- c. If yes which are reasons advanced by those ones who do not accept vasectomy?

8. Which are mechanisms do you use to convince your clients to opt for vasectomy among other birth control methods?

9. Do you have annual targets in regard to new adherents to vasectomy?

- a. Yes
- b. No
- c. If yes, do you achieve your targets in regard to vasectomy adhesion?

10. How can you rank the acceptability of vasectomy by your clients compared to other methods of birth control?

C. Vasectomy effects

11. Which are official positive results of vasectomy?

12. What are the negative results of vasectomy?

E. Vasectomy and development

13. How do you relate vasectomy and family development compared to other birth control methods?

14. Is vasectomy cost effective to the country compared to other birth control methods?

- a. Yes
- b. No
- c. If yes, considering other vasectomy surrounding positive effects, how do you relate vasectomy with the national development as a whole?

F. Vasectomy partnership and policies

15. Do you have partners in raising the awareness of the population in regard to vasectomy like profit making, non-profit making (NGOs), development inter-governmental partners (DPs), etc ?

- a. Yes
- b. No
- c. If yes, you may mention them

16. Do you have technical partners in implementing vasectomy related activities which include conducting operations?

- a. Yes
- b. No
- c. If yes, you may mention them

17. Do you have financial support in vasectomy related activities?

- a. Yes
- b. No
- c. Is it enough? If not, what are you doing to have enough support?

18. Do you have strategies on board to make vasectomy a successful story?

- a. Yes
- b. No

c. If yes, which ones?

19. Do you plan to establish strategies to make vasectomy a successful story?

- a. Yes
- b. No
- c. How?

20. What is your follow-up policy for men who have undergone vasectomy at your centre?

21. What are the medical options for when things go wrong with the vasectomy operation?

22. What do you advise a man who has had a vasectomy, and later wishes to have it reversed?

23. Which advice can you give in regard to birth control vis-à-vis vasectomy?

Thank you / Murakoze