

**University of KwaZulu-Natal**

**Exploring the factors influencing family planning methods in Nyagatare District, Rwanda**

**by**

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**Exploring the factors influencing family planning methods in Nyagatare District, Rwanda**

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**Master of Nursing (Community Health Nursing)**

by

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December 2011

## Declaration

I, Désiré Urindwanayo, declare that the research reported in this thesis entitled “Exploring the factors influencing family planning methods in Nyagatare District, Rwanda”, except where otherwise indicated, is my original research. This thesis has not been submitted for any degree or examination at any other university. This thesis does not contain other persons’ data, pictures, graphs or other information, unless specifically acknowledged as being sourced from other persons. This thesis does not contain other persons’ writing, unless specifically acknowledged as being sourced from other researchers. Where other written sources have been quoted, their words have been re-written. The general information attributed to these authors has been referenced and where their exact words have been used, their writing has been placed inside quotation marks, and referenced. This thesis does not contain graphics, text or tables copied and pasted from the internet, unless specifically acknowledged, and the resource being detailed in the thesis and in references sections.

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Date : .....

**Dedication**

This study is dedicated to my parents, Jonas and Regina, and other relatives for all their love, support and encouragement.

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Firstly, glory be to the Lord God for the things He has done for me and the things He will do. Indeed, I owe my existence to Him. I will not withhold, but render my gratitude to the Lord for his provision and protection.

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## **Abstract**

**Introduction:** This study was conducted in Nyagatare District, Rwanda, to explore the factors influencing family planning methods in the district. Family planning is a service used to regulate the growth rate in low-, middle- and high-income countries. John Guillebaud was wary of the growing population rate and commented that the scale of the population in the world is problematic. He argued, “There are 79 million extra people arriving in the world each year” and adds that there is an estimation of around 60 million deaths and 139 million births. Tedder adds that billions are added in the world constantly where there are already more than 6.7 billion people. Recently, on Monday 31<sup>st</sup> October 2011, the United Nations reported that the world population had reached seven billion.

**Aim:** The overall aim of the study was to identify factors that influence family planning methods in Nyagatare District in Rwanda.

**Method:** In this study, a quantitative descriptive design with a positivist paradigm guided the whole research process. Two levels of sampling were done. The first was random sampling for the selection of healthcare centres where five healthcare centres were selected out of a total of eighteen. The second level was probability sampling with a systematic strategy, which was used to select the participants at healthcare centres. A total of 137 women volunteered to participate in the study and completed an anonymous questionnaire. The authorisation to carry out the research was obtained from Nyagatare District and five healthcare centres. The research was approved by the University of KwaZulu-Natal Ethics Committee.

The data was analysed using SPSS version 19 and the results are presented in tables and figures. Numerical data were tested for their distribution by means of the skewness test. The Kruskal-Wallis test and Fisher’s exact test were done to test the association between family planning methods and socio-demographic factors.

**Results:** The findings revealed four top family planning methods in use in Nyagatare District, namely injection, diaphragm, condom and withdrawal. The family planning methods that are not used in Nyagatare District are emergency contraceptives and implants. Women who reside in Nyagatare District see family planning in a positive way and they agree that family planning is important. Information on family planning in Nyagatare District was sourced from healthcare

centres, theradio, nurses and community health workers and a significant 7.3% from the traditional birth attendants.

The test of association showed the significance value at marital status with  $p\text{-value}=0.001$ . Other socio-demographic factors are not statistically significant.

The research report ends with a summary of the limitations of the study, the recommendations directed to the Ministry of Health, local government of Nyagatare district and suggestions for further research.



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## **Chapter one: Introduction**

### **1.1. Background and rationale**

Family planning is a service used to regulate the growth rate in low-, middle- and high-income countries. John Guillebaud, emeritus professor of Family Planning and Reproductive Health at the University College, London, was wary about the growth rate of the population and commented that the scale of population growth is problematic. He argues, “There are 79 million extra people arriving in the world each year” (Jones, 2008:4), and adds that there are an estimated 60 million deaths and 139 million births annually (Jones, 2008). Tedder (2011) adds that millions are added to the more than 6.7 billion people in the world constantly. Recently, the United Nations reported that on Monday 31 October 2011, the world population had reached seven billion (Tedder, 2011). This rapid growth is possibly accompanied by high mortality, and high numbers of deaths are reported in women and children (Jones, 2008; Smith, Ashford, Gribble and Clifton, 2009). The suitable means to save and enhance lives for this vulnerable group is family planning. Family planning is the tool that has been proved by different authors (Jones, 2008; Smith, Ashford, Gribble and Clifton, 2009; Department of International Development, 2010) not only to save the lives of this category but also to reduce the number of unintended and unwanted pregnancies.

Many countries experience high fertility rates and the land for living is limited. For the development of a family, a country and the world, the limitation and spacing of births are important. Women who control their fertility have fewer unsafe abortions, thereby saving mothers' lives. Family planning enables women to space births, and longer birth intervals reduce maternal and infant mortality rates. Family size is thus regulated through contraception methods. However, the low rate of contraceptive use and high fertility rates persist in most countries in sub-Saharan Africa, particularly in Rwanda. This can hinder the development of those countries (White and Speizer, 2007). The knowledge of female perceptions on family planning methods as well as the factors that hinder the demand for family planning is the cornerstone for achieving the desired development, because such knowledge will inform policy-makers where to focus

efforts. The methods used in family planning are oral contraception, contraceptive injections, intrauterine devices, emergency contraception and condoms.

Condoms play a significant role in preventing sexually transmitted infections (STIs) including HIV/AIDS, as well as unplanned pregnancies (Casey, Mitchell, Amisi, Haliza, Aveledi, Kalenga and Austin, 2009). Among the modern contraceptive methods, the condom is the only method that gives dual protection. Condoms are easily available in shops and at almost all pharmacies at a low price. At some public venues and at clinics, male condoms are available free of charge. Female condoms are sold at some pharmacies and are also available free of charge at a few designated clinics in Rwanda. Research by Frost and Darroch (2008) in the United States showed that condom use is more common among black women than among whites (43–52% versus 28%), and among unmarried and non-cohabiting women than among their married counterparts (39% versus 31%). In 2003, the condom accounted for 5.7% of contraception worldwide. In Northern Europe, between 10% and 22% of married couples use condoms, while in Eastern Africa, it accounts for 1.2%. In most countries in that region, the figure is well below 1% of condom usage (Glasier, 2010). Other methods of family planning are sterilisation, implants, abortion, lactation amenorrhea, withdrawal, fertility awareness, abstinence and outercourse (Casey, Mitchell, Amisi, Haliza, Aveledi, Kalenga and Austin, 2009).

Family planning is a central feature of the lives and health of women all over the world. A conference held in Cairo showed the interconnection between a sustainable environment, reproductive health and economic development (Griggs, 2009). This interconnection emphasises the importance of increasing family planning, which improves health (especially for children) and can prolong lives, improve economic growth, reduce the need for abortion, decrease the spread of HIV/AIDS and expand life choices for women. It can also prevent the many environmental problems associated with the use of natural resources and deter the consumption of such resources (Griggs, 2009). The choice of contraceptive methods, the number of children and childbearing intervals have an impact on women's gynaecological and overall health, as well as their social and economic status in society (Subramanian, McGrath, Ndlovu and Gafos, 2008).



A high fertility rate is of concern for countries with a high density and large populations. The available resources are insufficient because of high fertility rates. This can be the consequence of inadequate birth spacing, which can yield a high infant mortality rate as well as a high maternal mortality rate. In contemplation of mortality, an estimated 600 000 maternal deaths occur worldwide each year, 99% of them in low-income countries, where there are high fertility rates (Ibnouf, Van den Borne and Maarse, 2007; Ali, Rayis, Mamoun and Adam, 2011). However, Mavranetzouli (2009) looked at the world from a pregnancy perspective to describe fertility, and estimated that about 210 million pregnancies occur each year worldwide. Of these pregnancies, 38% are estimated to be unintended and 22% end in abortion. Globally, 15 million women under the age of 20 give birth, representing up to one-fifth of all births and 526 000 women die due to pregnancy and childbirth-related complications each year. This birth rate of women younger than 20 years explains early sex initiation, which gives way to the high population growth and the upshot of pregnancies (Acharya, Bhattarai, Poobalan, Van Teijlingen and Chapman, 2010). Worldwide, the percentage of unintended pregnancies is high. In high-income countries, it can be as high as 49% and in low-income countries, 36% (Ibnouf et al., 2007).

In the United States (US), utilisation of family planning is also problematic. Currently, 4.5 million women do not use a contraceptive method despite being at risk of unintended pregnancies. About 50% of unintended pregnancies that end in abortion can be attributed to non-use of contraceptive methods (Wu, Meldrum, Dozier, Stanwood and Fiscella, 2008). Even if the deployment of contraceptives is unknown, 95% of all sexually active women have used it at some point, and 35 million women use some form of contraception. Zurawin and Ayensu-Coker (2007) argue that there are roughly 3.6 million unplanned pregnancies in the United States each year, and improper use of any contraceptive method alone accounts for about one million of these pregnancies. In addition, half of these end in abortion. This clearly shows that American women know enough about contraceptive methods, even though there are shortcomings in their utilisation of contraceptives. Some of these women do not use family planning services; thus, they end up succumbing to unplanned pregnancies.

Hussainy, Stewart, Chapman, Taft, Amir, Hobbs, Shelley and Smith (2010) point out that in Australia, 50% of all pregnancies are unintended, while a quarter of these pregnancies end in abortion. In developed countries, the highest number of abortions is documented among

teenagers. One may find a rate of 20.1 per 1 000 abortions among women aged 15–19 years old. The authors add that between one half and two-thirds of abortions in Australia can be ascribed to women who used contraceptive methods at a certain point and time. The causes of these unintended pregnancies are sexual assault, non-use of contraceptive method and failure of contraceptive methods (Hussainy et al., 2010).

India is home to one-sixth of the world's population, and to 30% of youth aged 10–24. There are more than 211 million 15–25 years old in India, and they account for 48% of the country's fertility rate, including early marriages and childbearing which are common phenomena in that country (Daniel, Masilamani and Rahman, 2008).

The results from studies done in Italy, the United Kingdom, France, Portugal and Denmark found that the use of contraceptive depends on women's levels of literacy. For instance, inconsistent use of oral contraceptives was found among 1.3% of women who could read and understand all prescriptions from their family planning provider, and 1.9% of women who could read and understand a little or none of the prescriptions from their family planning provider (Zurawin and Ayensu-Coker, 2007). In Africa, approximately 20% of pregnancies are unplanned, which impacts remarkably on women's lives, i.e. on their economic, social and physical wellbeing (Subramanian et al., 2008).

Wilmoth, Mathers, Say and Mills (2010) state that sub-Saharan Africa has the highest infant and under-five mortality rate of all regions in the world. Although only 22% of sub-Saharan Africa uses contraceptive, 46% of all under-five mortalities in 2006 had occurred there, with about 40% of the deaths occurring within the neonatal period. The authors further argue that the 1978 Alma-Ata Declaration came at a time of intensified efforts towards the promotion of family planning in response to fertility rates in sub-Saharan Africa. One of the major concerns during this period was the high population growth rate and its impact on socio-economic development and the environment. The maternal mortality rate in sub-Saharan Africa dropped from about 823 per 100 000 live births in 1978 to 785 in 1992 (Wilmoth et al., 2010). In 2008, the maternal mortality rate in different countries of sub-Saharan Africa showed a high rate. For instance, in Niger there were 820 deaths per 100 000 live births, in Mali 830, Nigeria 840, the Central African Republic 850, Sierra Leone 970, Burundi 970, Liberia 990, Guinea-Bissau 1 000, Chad 1 200 and Somalia 1 200 (Wilmoth et al., 2010). In summary, all of sub-Saharan Africa has a maternal mortality rate

equal to 640 per 100 000 live births, while the worldwide maternal mortality rate decreased from 430 to 400 per 100 000 live births between 1990 and 2000, representing a 6% reduction. Over the same period, there was a 4% reduction in maternal deaths in Africa as a whole, 61% reduction in North Africa with an increase of 11% in sub-Saharan Africa (Mwalali and Ngui, 2009). Data from UNICEF (Mwalali and Ngui, 2009) shows the maternal mortality rates in sub-Saharan Africa remained more than twice that of the rest of the world despite increased global health efforts, resources and improved technology. Research shows that 80% of maternal deaths in sub-Saharan Africa are due to obstetrical causes (Mwalali and Ngui, 2009). It has been found that factors responsible for the infant mortality rate include birth order and birth interval, family size and maternal age at the child's birth (Macassa, Hallqvist and Lynch, 2011)

In Nigeria, a lack of access to family planning was found in the case of 0.2% of nonusers who did not want to be pregnant. Many of these did not want to or did not intend to use modern contraceptive methods because they had heard that these were dangerous, or because their religion or their male partners were opposed to the methods (Sills, 2011). A study by Kotb, Bakr, Ismail, Arafa and El-Gewaily (2011) in Cairo found that 7.4% women were identified as having an unmet need for contraception, of which 46.6% had an unmet need for spacing, and 53.4% had an unmet need for limiting births.

In Uganda, a demographic and health survey done in 2001 showed an increase in the use of contraceptive methods among newly married women. The proportion shifted from 15% to 23% over five years, from 1995 to 2000. This had a great impact on the utilisation of a family planning programme. In 1995, the rate of modern contraceptive methods used was 8% and in 2000, it was 18%, but the country also experienced an increase in the unmet need for family planning (Lutalo, Kigozi, Kimera, Serwadda, Wawer, Zabin and Gray, 2010). In 2001, it was 35% compared to the unmet need in previous years (29% in 1995). The country counted a 6% increment rate for unmet needs, from which is clear that the unmet needs in Uganda are increasing. Lutalo et al. (2010) state that the fertility rate in Uganda continued to increase from 6.9 children per woman to 7.1 children per woman among women in their reproductive ages (15–49 years). The authors further pointed out that spacing births by two years is a dream for many women in Uganda. The survey further showed that a quarter of all Ugandan women wish for an interval between children; nevertheless, only 15% use contraception in one form or another. A

report on sub-Saharan Africa fertility indicated a decrease in fertility due to a smaller desire for a large family in most countries in that region but nothing changed in Uganda (Lutalo et al., 2010). Uganda's population rate is up by 3.4%, which means that over one million habitants are added each year (Wabaki, 2006).

According to Plummer, Wamoyi, Nyalali, Mshana, Shigongo, Ross and Wight (2008), Tanzania also has problems regarding family planning. When an unplanned pregnancy happens, the woman tries to terminate the pregnancy because of the rules and values of Tanzanian communities. Plummer et al. (2008) state that women in Tanzania are not prohibited from aborting as well as engaging in premarital pregnancies. They cannot visit the health facilities for fear of being ridiculed, thus they prefer to use unsafe methods, which guarantee anonymity. In addition, these authors report that, when an unmarried woman in Tanzania becomes pregnant, she loses the possibility of choosing a spouse, and her status reduces her bride price. She can also be legally prohibited from terminating a pregnancy. Contraception methods could be a solution to almost all problems related to unplanned pregnancies as well as exposure to unsafe abortions. In Mwanza (Tanzania), there is low utilisation of contraceptive methods, which explains the need for education about reproductive health. Such education will not merely help unmarried women but also married couples because unintended pregnancies are the result of failure or misuse of contraceptive methods.

Casey, Mitchell, Amisi, Haliza, Aveledi, Kalenga and Austin (2009) report that the Democratic Republic of Congo is among the countries in the world with the highest maternal mortality ratio, which is estimated to be between 549 and 1 100 maternal deaths per 100 000 live births. The causes are multiple. Among these are unsafe abortions, which represent about 13%. Contraceptive prevalence is very low, with 6.7% of women of reproductive age reporting current use of a modern method of family planning, ranging from 9.5% in urban areas to 3.3% in rural areas (Casey et al., 2009). Similar to other countries in the developing world, Burundi, home to 8.5 million people, has a population growth rate of 3.9% (from 2001 to 2007) of which 46% are younger than 15 years of age (Ross, Stover and Adelaja, 2009).

Thaxton (2007) says the Kenyan population is projected to reach 51 million by 2025 if the growth rate remains unchanged. An estimation of the growth rate of the population in this country is 2.8%. In 2007, the population stood at 37 million. The total fertility rate in this

country is 4.8%, which is lower than other eastern African countries. Thaxton (2007) reports that the use of oral contraceptives combined with intramuscular contraceptives, and intrauterine devices has plateaued in Kenya. The stagnation in the use of family planning has been attributed to the health agencies' focus on resources to fight against HIV/AIDS, a boost in socio-economic progress, lack of continuous family planning education outreach, and the intermittent availability of contraceptive methods. However, the fight against HIV/AIDS has to be linked with family planning (Thaxton, 2007).

Seventeen years after one of the worst genocides in modern history, the nation of Rwanda still struggles with rebuilding the country. The healthcare workforce was affected significantly by the killing of almost one million of the population, among them a large number of nurses and physicians. In the post-genocide years, the population has increased rapidly due to returning citizens who had fled the country before and during the genocide period, coupled with traditionally high fertility rates (Alexander, 2010). The 2000 demographic and health survey showed that only 2.6% of women were using any family planning method (Blair, Sinai, Mukabatsinda and Muramutsa, 2007). The Minister of Health estimates fertility rate to be 5.5% (Ministry of Health, 2009). In 2005, the maternal mortality rate in Rwanda was 750 per 100 000, resulting in more than 2 700 deaths among women due to pregnancy and delivery-related complications (Alexander, 2010). Research conducted in Rwanda by Elul, Delvaux, Munyana, Lahuerta, Horowitz, Ndagije et al. (2009) revealed that modern family planning remains low among Rwandan women. The demographic speed caused by a change of population in a short time is identified as problematic in strategic planning because natural resources remain unchanged. It is believed that the population of Rwanda has a high growth rate. For instance in 2009, the population was 10 473 280, and 2011 the population was estimated to be 11 370 430 (Index Mundi, 2011). In two years, 897 150 had been added to the population but where the countries size and resources are not growing.

It is projected that Rwanda's population will have doubled by the year 2050 (Bryant, Carver, Butler and Anage, 2009).

A concern and possible reason for the population increase in Rwanda might be that Rwandan culture is promoting a high number of children as it is believed that having many children makes you stronger. In addition, if you choose to limit the number of children, you are considered as

selfish; you do not want to share your property with others. Another myth associated with the high rate is that taking the Pill makes one infertile (Jones, 2008). This understanding still impacts on the adherence to contraceptives and it is important for the nurses in the community to keep this in mind in their practice. Research conducted in five districts of Rwanda by Family Health International (2010) found that religious beliefs accounted in 5% of cases for not using contraceptives.

Family planning must be made available to all in order to tackle the matter of high fertility in limited resource settings. Current demographic indicators in poor countries are evaluated based on socio-economic factors and slow progress in these countries, namely low incomes and a high growth rate. In this study, Prata's (2009) four recommendations in order to ensure the use of contraceptives are accepted. These steps are:

- making family planning a permanent line item in healthcare system's budgets;
- increase knowledge about the safety of family planning methods;
- take immediate action to remove barriers hindering access to family planning methods;
- and
- ensure contraception is genuinely affordable to the poorest families.

## **1.2. Problem statement**

Many studies show that population growth is of concern for low-, middle- and high-income countries in terms of the high rate of infant mortality and maternal mortality (Thaxton, 2007; Jones, 2008; Casey et al., 2009). This impacts on the development of the countries and does not allow the achievement of socio-economic goals as well as the Millennium Development Goals by the year 2015 (Do, 2009).

Family planning becomes a serious problem in countries where there is high population density, like in Rwanda (355 inhabitants per square kilometre) and where a large number of inhabitants are living in rural areas where their main activity is farming (91%), and 34% of all inhabitants live on small pieces of land (Solo, 2008; Do, 2009; Ndaruhuye, Broekhuis and Hooimeijer, 2009;). A high fertility rate is one of the characteristics of population growth. A high fertility rate is observed in low-income countries. In Rwanda, for instance, it is estimated to be 5.5 (Ministry

of Health, 2009). Current data released in July 2011 shows that Rwanda's population stands at 11 370 430 (The World Factbook, 2011). The statistics show a rapid growth rate compared to previous years. The Rwandan population grew as follows between 2000 and 2011: 2000 (7 229 129) and 2011 (11 370 430). These estimations are done in July of each year (Index Mundi, 2011). This high growth rate is associated with poverty where 57% of population live below the national poverty line and 37% live in extreme poverty (Republic of Rwanda, 2010). Culture and religion affect many people in that the environment within which they grow up does not support family planning.

Family planning is one of the solutions that can be used to address population growth. Family planning is a central feature of life and health for women all over the world (Griggs, 2009). Rwanda's goal towards family planning programmes is to reach 70% of the population by the year 2012. In Rwanda, the Millennium Development Goals of 2010 showed that 27% of the people in the country are currently using contraceptives (Abbott and Rwirahira, 2010). Nyagatare District has a rate of 11.8% in terms of family planning, which is still very low. Much effort is still to be made to sensitise the population of Nyagatare to understand the importance of limiting births (DCDP, 2007). As a result of this, the researcher was interested to explore factors that influence family planning in Nyagatare District, Rwanda.

### **1.3. Aim of study**

The overall aim of this study was to identify the factors influencing family planning methods in Nyagatare District.

### **1.4. Research objectives**

To achieve the aim, the following objectives were identified:

1. to identify methods used in family planning among the women in Nyagatare District, Rwanda;
2. to explore the perceptions regarding family planning methods among women living in Nyagatare District, Rwanda;

3. to determine the socio-demographic factors that influence women's choice of contraceptive methods in Nyagatare District, Rwanda; and
4. to identify sources of information on family planning methods among women living in Nyagatare District, Rwanda.

### **1.5. Research questions**

To achieve the aim, the study sought to answer the following questions:

1. What is the perception of women living in Nyagatare District regarding family planning methods?
2. Which socio-demographic factors are associated with the family planning methods?
3. Which family planning methods are not used in Nyagatare District, Rwanda?
4. What are the sources of information on family planning to the women living in Nyagatare District, Rwanda?

### **1.6. Definition of concepts**

The terms that will be defined here are *family planning* and *family planning methods*.

#### **Family planning**

Family planning is the capacity of a couple or individuals to decide on and arrive at the number of children they wish to have and spacing between births by avoiding unwanted pregnancies, and ensuring the healthy growth of each member of family (DOH, 2001; Alade, 2010; Arbab, Bener and Abdulmalik, 2011).

#### **Family planning methods**

Family planning methods are means that can help a couple to avoid unplanned pregnancies and delay having a baby. Examples are injections, sterilisation, implants, abortion, lactation amenorrhea, withdrawal, fertility awareness, abstinence, pills, outercourse, intrauterine devices, emergency contraceptives and condoms.



## **1.7. Theoretical framework**

A theoretical framework is defined by Lobiondo-Wood and Haber (1990) as a frame of reference for subsequent definitions of variables, research designs, interpretation and generalisation. The health belief model will serve as a theoretical framework for this research. In this model, the focus is on beliefs and attitudes of individuals. The health belief model addresses the individual's perceptions of the threat posed by a health problem (susceptibility, severity), the benefits of avoiding the threat, and factors influencing the decision to act (barriers, cues to action, and self-efficacy) (Glanz, Rimer and Lewis, 2002).

The health belief model was initially developed in the 1950s by social psychologists in the United States Public Health Service to explain the widespread failure of people to participate in programmes to prevent and detect disease. Later the model was extended to study people's responses to symptoms and their behaviours in response to a diagnosed illness, particularly adherence to medical regimes. The model then evolved gradually in response to very practical public health concern (Champion and Skinner, 2008).

Usually people are ready to act if they –

- believe that they are susceptible to a situation (perceived susceptibility) –the population see that they are at risk of poverty, due to giving birth of children that they will be not able to take care of; consequently there will be an increased demand for limiting and spacing of births;
- believe taking action would reduce their susceptibility to the condition or its severity (perceived benefits);thus making them understand the benefits of family planning (FP) through education of the community;
- believe the condition has serious consequences (perceived severity) – by showing them the growth rate, place to live, life of small versus large family, they will see the severity of the condition on the country;
- believe that the costs of taking action (perceived barriers) are outweighed by the benefits; seeing and understanding the benefits versus barriers, they will take proper action;

- are confident in their ability to perform an action successfully (self-efficacy) –by discussion with health providers, the community will be able to choose appropriate methods for limiting and spacing births; and
- are exposed to factors that prompt action: media, information, education (increases participants' knowledge of FP).

The following table summarises the health belief model that will be used as a theoretical model that explains the application of Figure 1.1 below. The health belief model has been adopted for this study (Glanz et al., 2002).

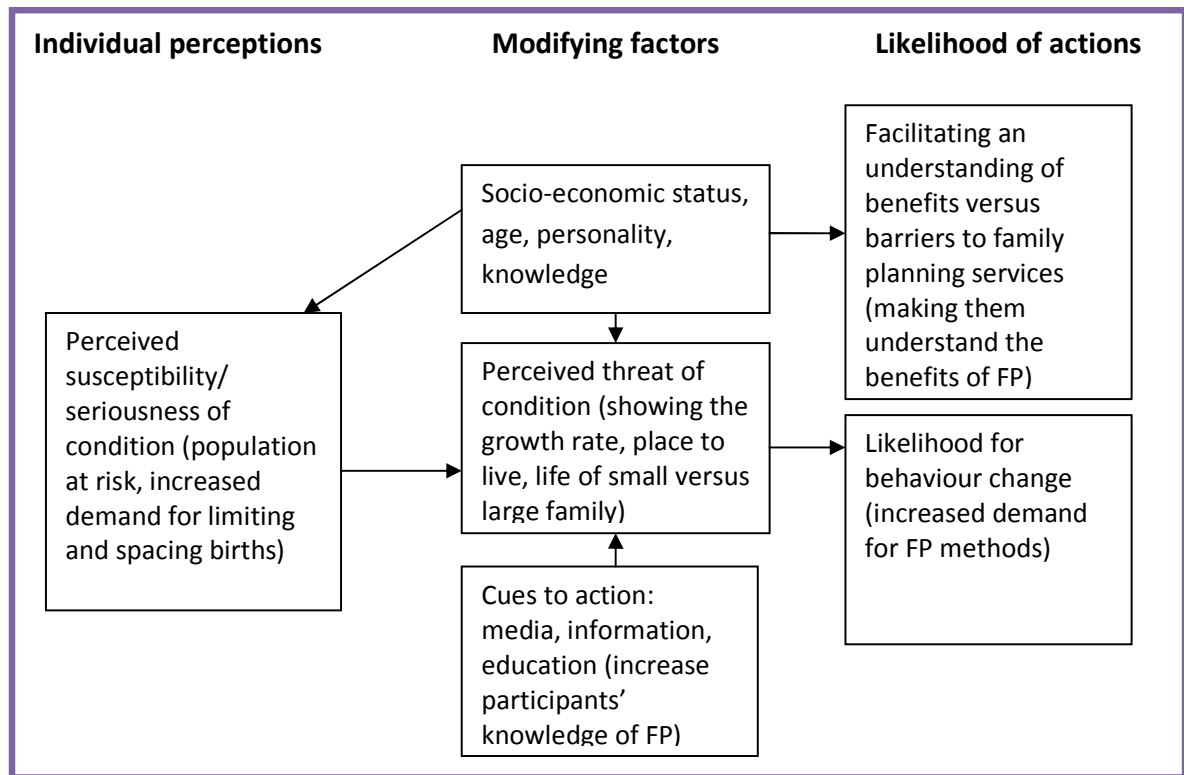
**Table 1.1 Health belief model: concepts, their definitions and strategies related to family planning**

Concept	Definition	Strategies
Perceived susceptibility	Beliefs about the chances of getting a condition	Define a population at risk of pregnancy and the level of risk Help women to develop a perception of their own risk of high fertility (this impacts on family planning [FP]– demand for spacing, limiting)
Perceived severity	Beliefs about the seriousness of the condition and its consequences	Specify the consequences of high fertility (by emphasising fertility and wanted and unwanted pregnancies that occurred)
Perceived benefits	Beliefs about the effectiveness of taking action to reduce risk or seriousness	Participants' perception regarding the benefits of family planning even if there are societal and individual factors, value and demand for children as well as other intermediate variables interacting with them
Perceived barriers	Beliefs about material and psychological costs of taking action	Participants' perception of feasibility of family planning methods including contraceptive practice
Cues to action	Factors that activate readiness to change	Participants' levels of knowledge of family planning. Does their knowledge make them ready for cues to action?

(Rosenstock, Strecher and Becker, 1994:5-24)

## 1.8. Health belief model

After defining the theoretical framework, the researcher applied Health Belief Model in the following theoretical framework to guide the research process.



**Figure 1.1** Application of theoretical framework (Glanz et al., 2002)

Family planning is centred on community services and health facilities. The focus of the current investigation was on the community that uses health facilities rather than on health facilities' activities. This focused on the following aspects: the social and individual factors, values and demand for children, family planning in terms of limiting and spacing, intermediate variables, and fertility (wanted and unwanted pregnancies) as well as contraceptive practice. The conceptual model depicted above shows the focus for this study and the reason why health facilities activities are not mentioned.

## **1.9. Conclusion**

This section presented the introduction to the study, the background of the study, the problem statement, research questions, and the aim of the study, objectives, significance of the study and the definitions of terms to be used. The researcher presented the theoretical and conceptual frameworks that will guide the study. The next chapter will focus on the literature review.

## **Chapter two: Literature review**

### **2.1. Introduction**

Polit and Beck (2007) state that a literature review is necessary for comparing results of earlier research in order to explore what further research would be necessary.

This study will be linked to other similar research. The findings will be understood within the existing base of knowledge and perceptions on contraceptive methods. In this study, the term *contraceptive method* will be used interchanged with *family planning method*. The researcher conducted a literature review through empirical and theoretical sources on the factors that influence family planning (FP).

The literature search included the following computerised databases: EBSCOhost, CINAHL (Cumulative Index to Nursing and Allied Health Literature) and MEDLINE (Medical Literature Online). Methods of family planning, components and benefits of family planning, the importance of achieving the Millennium Development Goals, perceptions of family planning, the relationship between family planning and HIV/AIDS, the choice and reason for non-use of contraceptives are discussed in this chapter. Some of databases gave abstracts only. This was a limitation encountered while searching for information.

### **2.2. Components of family planning**

According to the WHO (2010), family planning has to be integrated within primary health care, and be a part of the daily activities, including the care and prevention of breast cancer, sexually transmitted infections (STIs) including HIV/AIDS, and cancer of the cervix.

Counselling and education for informed contraception decision-making was also an important aspect to the people in order to adopt new behaviour. The WHO(2010) also suggested that family planning services should be integrated within curative and preventative reproductive and sexual health care. The availability of and access to contraceptive supplies (WHO, 2010) are considered as milestones to adhere to FP methods.

### **2.3. Benefits and potential impact of family planning**

The WHO (2010) reports that family planning slows population growth and significantly contributes towards the reduction of poverty and hunger and also helps to achieve national and international development goals. The WHO report adds that family planning has the potential to empower women and families as well as to promote gender equity. Family planning has the potential to decrease 71% of unwanted pregnancies, i.e. 22 million fewer unplanned births, eliminating 53 million unintended pregnancies, seven million fewer miscarriages and 25 million fewer induced abortions (WHO, 2010).

Family planning has the potential to reduce 10% of newborns, infant and child deaths and 32% of maternal deaths. If all women at risk of unintended pregnancy use modern contraceptive methods, the decline in unsafe abortions and unintended pregnancies would reduce the cost of post-abortion care to about \$230 million a year where termination of pregnancy is allowed (WHO, 2010). Family planning can avert 80% of HIV infections via sexual transmission with correct and consistent use of condoms (WHO, 2010).

Chapman (2011) states that people cannot be coerced to adopt family planning if they do not see the benefits they can gain from a small family. The essential element is to know what the barrier is to them and to make them understand it because if they understand they can adopt family planning.

### **2.4. Population perception about family planning**

Women's aptitude to plan the number of children and to space births reduces the health risks connected with pregnancy. The use of contraception in low-income countries increased from 8% in the 1960s to 62% in 2007 (Rahnama, Hidarnia, Shokravi, Kazemnejad, Oakley and Montazeri, 2010). These authors argue that constant and considerable unmet needs remain in all regions, for example in sub-Saharan Africa many women need to delay their childbearing by using contraceptive methods. Estimates show that one in every four women would like to delay or stop getting pregnant (Rahnama, Hidarnia, Shokravi, Kazemnejad, Oakley and Montazeri, 2010). In contrast, the authors point out that husbands in Iran opt for the use of oral contraceptives, and say that men are worried about the dangers of contraceptives and that it could damage the health of

women. One respondent in a study conducted in Iran reported that her husband was not impressed with modern contraception methods, and that he said, “I am easy with withdrawal method. The Pill is unsafe for you. It makes you infertile and obese. Possibly you will get pregnant, but I am completely in control” (Rahnama et al., 2010). Education about family planning is needed in all the low-, middle- and high-income countries.

## **2.5. Reasons for non-use of family planning**

There are reasons described by literature for the non-use of contraceptive methods and will be discussed accordingly.

### **2.5.1. Poor quality of available services**

Childbirth and pregnancy is not a disease. It can however be the beginning of health risks whose effects could be minimised by utilising family planning methods as one of the healthcare interventions. Maternal deaths occurring during or after childbirth could be prevented or their complications or damage decreased if healthcare professionals act promptly to assist women through sufficient and correct equipment, skills and medicine. Murthy (2007) argues that the cost and physical inaccessibility of healthcare services could hinder childbearing in the presence of skilled health personnel. He refers to deaths occurring because of lack of resources and facilities even if there are qualified personnel available or present. Murthy (2007) adds that less educated and poor women also those living in rural areas are far less likely to give birth with the assistance of skilled health workers in comparison to better educated woman who live in urban areas or richer households.

### **2.5.2. Limited choice of method**

Choice regarding contraceptive use and childbearing is among the vital decisions that people have to make. David (2008) states that communities need more information and simple explanations on decision-making regarding the benefits of family planning and the effects of different methods, to enable informed decision-making by these women. He adds that the benefits and importance of family planning can be explained beyond individuals, family and

community, national and international levels. David (2008) speaks out that choices and decisions by families concerning family planning are most likely to meet individual needs where the decisions are based on relevant information, which is accurate and medically reasonable. It has been observed in many countries that family planning programmes are part of the national consideration for social and economic development efforts. Efforts to raise awareness about the reproductive right of society, community and family foster equity in decision-making and promote informed choices about family planning (David, 2008).

### **2.5.3. Fear or experience of side-effects**

The side-effects experienced by users are of the reasons for quitting certain kinds of contraceptive methods. David (2008) argues that people choose contraceptive methods that are popularly used in their community because they know that it is communally acceptable to do so, and they also tend to know more about these methods. For instance, the Pill (progestinonly) may result in irregular bleeding, headaches, nausea, breast tenderness, etc. (Freeman and Shulman, 2010).

### **2.5.4. Cultural opposition**

Cultural practices and beliefs combined tend to put girls and boys, women and men at risk of unwanted pregnancies and may stop people from practicing safe behaviours. Bisika (2008) reports that women in Malawi use the rope that is traditionally believed to protect a woman from becoming pregnant. In this community, there is a misconception about family planning. Women think that they will become permanently infertile if and when they make use of family planning methods. However, the rope may not prevent pregnancy because the rope does not act as a barrier to spermatozooids or prevent ovulation. Women carry the rope believing that they may not become pregnant even if they have unprotected sex. Intensive education about family planning in this community is required.

According to Judaism, procreation is a duty of males, but a commendable act for females; therefore, the husband must be informed in order to grant permission for the use of any sort of contraception method (Srikanthan and Reid 2008).



### **2.5.5. Religious opposition**

Christian Connections for International Health (CCIH) is aware of issues concerning family planning methods and the way contraception is a concern among numerous members of faith-based groups. Several elements affect decision-making among Christianity believers. Huber, Martin, Wilson, Harris, Nesbitt and Fraser, (2010) state that the decisions about which methods are acceptable vary extensively among individuals and Christian denominations, and are influenced for some by whether the method is thought to act as an abortive means or to prevent conception.

Christian teachings differ depending on the denomination. According to the teachings of Roman Catholicism, the crucial purpose of sexual relations within marriage is procreation. Roman Catholics are consequently prohibited to use physical or medical contraceptive methods. Acceptable methods are natural contraceptive methods, i.e. abstinence (Srikanthan and Reid 2008). While Eastern Orthodox Christians hold a similar view of the purpose of sexual relations within marriage, the majority of contraceptive methods are allowed. Srikanthan and Reid (2008) add that liberal Protestants encourage procreation but also accept that marriage is for the purpose of sexual relations. The need to procreate reflects a literal interpretation of the Bible among conservative Protestant groups, yet it is common for adherents to use birth control after the family has desirable children. Among Protestants, no specific forms of contraceptive are banned (Srikanthan and Reid 2008). Hirsch (2008) reports that younger Protestant women in Mexico at least attempt to use withdrawal and periodic abstinence. Hirsch (2008) adds that the key reason for their preference for natural methods is their concern over the use of methods forbidden by the church. He further adds that all of the women in his study knew that the use of modern methods was regarded as sin by the church.

For centuries, Islamic scholars have been divided over the question of contraceptives. Many say the Qur'an prohibits birth control, while others argue that married couples can use contraceptives; however, it should not be used for reducing the overall number of children but only to increase the intervals between births (Melby, 2009). Melby speaks out that the Islamic faith does not believe in limiting the number children because children belong to God.

### **2.5.6. Gender-based opposition**

Religious beliefs have a strong influence on gender roles in the relationships, influencing the decision-making in the relationship. In the Jewish society, for example, cultural rules as well as religion prescriptions apply. Procreation is a duty for males, but a commendable act for females. As a result, the husband must be informed in order to approve the use of any kind of contraception (Srikanthan and Reid 2008). In Iran, the husband is the main decision-maker regarding the number of children. One woman narrated what happened when she got married: “When I got married, my husband told me that withdrawal is better. However, I later realized that my husband’s first choice was due to the fact that he sought to have power to control the childbearing time and the number” (Rahnama et al., 2010:289).

In the more patriarchal societies and in sub-Saharan Africa, men play a vital role in family planning. The decisions related to reproductive and sexual health are made by men, while reproductive and sexual health in its broader sense is the concern of both wife and husband. Consequently, many women are afraid to raise the issue of contraception for fear that their partners might respond violently (Kintu, 2010). Research by Orji, Ojofeitimi and Olanrewaju (2007) in Nigeria determined the role of men in family planning. This study showed that a high number of men agreed that decisions regarding family planning have to be made by both husband and wife. However, these decisions were found to be dependent on the age of the women. Research by Donahoe (1996) in Bangladesh showed that young women had no influence in reproductive decisions while matured women(30years and above) tended to make their own decisions.

### **2.6. Family planning and HIV/AIDS**

According to Manzini (2001), adolescents are engaging in sexual activities at a younger age in most cases. Sexual debut is often unprotected, unguided and uninformed. This happens possibly when the adolescents did not receive appropriate sex education (Manzini, 2001). Another possibility is the myth that a person with HIV/Aids will be healed when having sex with a young virgin (Manzini, 2001). Sexual abuse and exploitation might also be a reason for early sexual activity of young girls(Manzini,2001)need to find out what happened to their sex or due to

beliefs that, when a person living with HIV/AIDS, sleeps with a young child, such person will be healed. This is usually attributed to a lack of preparedness for the event. People who begin sexual activities at a very young age are less likely to use contraceptives. Young age at first intercourse is therefore a cause for concern because it marks the beginning of exposure to risks of unintended pregnancies and sexually transmitted infections including HIV/AIDS (Anderson, Beutel and Maughan-Brown, 2007).

In a study by Ma, Ono-Kihara, Cong, Xu, Pan, Zamani, Ravari and Kihara (2008) at the University of Eastern China it was found that of sexually active students, 10.6% of males reported their partners to have a story of pregnancy, and 11.6% of female students had experienced pregnancy; 10.0% of males reported their partners to have induced abortion and 11.3% of female students reported to have induced abortion. In Jamaica, the average age of sexual initiation is 13.2 years for boys and 15.2 years for girls (Hardee, 2002). An analysis of survey data among 15–19-year-olds revealed that more than 25% of boys in Brazil, Gabon, Haiti, Hungary, Kenya, Latvia, Malawi, Mozambique and Nicaragua reported having had sex before they were 15. For girls, the percentages in the same countries were somewhat lower, but were generally over 15%. In some countries, sexual debut among a small minority of youth occurs as early as age 10 (Ruland, 2003).

Bessinger, Akwara and Helperin (2003) report that in Zambia, first sex for young men was from 16.2 to 18.1 years, and for girls, the age of sexual debut was 17.1 years. A study conducted in South Africa showed that the age of sex initiation was 10 years (Burgard and Lee-Rife, 2009). However, Manzini (2001) reported that the age of first sexual intercourse in South Africa ranged from 10 years old to 20 years. Three surveys conducted by the South African Department of Health in 2002, 2005 and 2008 as stated in DOH (2009) showed that fewer than 10% of young people had started having sex before the age of 15 years. Each year about twice as many males were found to have started sex earlier in comparison to females, and the differences were statistically significant. When the results from 2002 were compared to those from 2008 and also 2005 compared to 2008, there was no substantial change noted for youth as a whole, nor for females. At the time of the study (DOH, 2009), there were not enough antiretroviral treatments as nowadays. As the technology advances, the medical field evolves too. When examining the South African national HIV prevalence, incidence, behaviour and communication survey of 2008

results alone (DOH, 2009), it is clear that the percentage of males who reported having started sex before the age of 15 was nearly twice that of their female counterparts (11.3% vs. 5.9%) (DOH, 2009). Besides, there was a substantial increase in the percentage of teenagers who had an older sex partner, from 9.6% in 2005 to 14.5% in 2008. In the 15–49 year age group, overall there was a significant increase in multiple sexual partnerships from 5.5% in 2002 to 10.6% in 2008. The research was done in terms of the bearing ages; however, when considering multiple partners, we have taken in consideration the legal age for cohabitation. There were significant increases found in the percentages of both males and females who reported having had more than one sexual partner over the previous 12 months, from 9.4% in 2002 to 19.5% in 2008 among males (DOH, 2009) and from 1.6% in 2002 to 3.7% among females (DOH, 2006).

These findings show that in South Africa, sex at an early age is common. This may contribute to the high incidence and prevalence of HIV/AIDS among young people, starting at 15 years or even earlier as previously mentioned (Ruland, 2003, Burgard and Lee-Rife, 2009). This early sex practice does not only contribute to an increase in HIV/AIDS cases but also to unplanned pregnancies among those young people. Teenage pregnancy is by definition indicative of unsafe sex, and should be understood in the context of the HIV/AIDS epidemic (Berry and Hall, 2009).

According to the 2003 South African Demographic and Health Survey (DOH, 2006), 12% of teenagers aged 15–19 years have never been pregnant or were pregnant during the survey. A study by MacPhail, Pettifor, Pascoe and Rees (2007) showed that by age 24 years, over two-thirds of young South Africans reported being sexually experienced and 50% had been pregnant, yet only half reported using contraception.

The population of Rwanda is very young. Of the population, 46.3% is younger than 15 and 67% is younger than 25 years old. Young people usually report that their first sexual intercourse ‘just happened’ and that they were not planning to have sex at the time. An estimated 12.1% of girls aged 15–19 in Rwanda have already had sexual intercourse, and in some districts, it can be as high as 20.4%. Unfortunately, adolescent and young people still have little access to contraceptives (Habimana, 2010).

The above statistics demonstrate that young people are at high risk of contracting HIV through their sexual behaviours by engaging in sex at an early age. It is also evident that young people

are victims of HIV/AIDS and unplanned pregnancies. Sex patterns are a key proximate determinant of fertility. Early sex can be associated with early childbearing and this plays a vital role in the population growth of the country (Chandrasekhar, Gebreselassie and Jayaraman 2007).

## **2.7. Family planning and poverty**

Seemingly self-evident to many non-economists, is the idea that rapid population growth (usually defined as an annual increase of 2% or more, equivalent to a doubling of population size every 36 years) can only exacerbate the issue of poverty, especially in countries where underemployment is already high or where food security is a major concern (Cleland, Bernstein, Ezeh, Faundes, Glasier and Innis, 2006). In addition, the authors report that in stagnant economies, it is undeniable that population growth inevitably increases the number of poor people as has happened in sub-Saharan Africa where the estimated number of individuals living on less than a dollar a day rose from 164 million in 1981 to 316 million in 2001. Nevertheless, an estimation of the effect of demographic factors on economic welfare has proved elusive, partly because poverty reduction is also affected by many other powerful forces (Cleland et al., 2006). Paradoxically, during the heyday of international investment in family planning in the 1980s, the prevailing view of the demographic economic relations among economists was cautious, bordering on neutrality. Since that time, evidence has become more affirmative in terms of the benefits of the reduction of fertility and population growth (Cleland et al., 2006). For example, Niger is one of the poorest and most illiterate countries in the world. It is also one of 12 nations whose population is expected to triple by 2050. Since the 1960s (Greene and Merrick, 2005), the population of Niger has already tripled, whereas its arable rain-fed land area has declined by half as a result of drought. The present situation is dire. In the 1990s, grain production was 15% lower than needed and in 2005, a famine was averted only by international food relief. The consequences of continued rapid population growth are potentially catastrophic. Prospects for future food sufficiency are especially bleak. The fertility rate in Niger remains unchanged and is one of the highest in the world. Contraceptive use is very low and is predominantly for spacing children rather than limiting family size. Only 17% of women from

Niger have an unmet need for family planning and, of these, 56% do not intend to use modern contraception in future (Greene and Merrick, 2005).

President of Uganda, however, believes that poverty will end through an increased population growth. Uganda's president sees China's success as an argument that a larger population will trigger economic growth. This view is being criticised by experts who argue that large numbers impoverish Uganda. The annual population growth in Uganda is 3.4% and experts warn that the population will hit 51.9 million by 2025(Wabaki2006).During the past three years donors have been pushing president of Uganda to change his view that more people equals more growth, by showing him evidence that other African countries have bolstered economic growth rates only by containing population growth. Wabaki reports that so far President of Uganda seems defiant, and insists that it is only through a large population and a big market that African countries like Uganda will develop. Nevertheless, the author continues that this is a population of largely poor people that can create an effective market. As stated by Wabaki (2006), experts insist that President of Uganda must act to stem Uganda's growing poverty. The country has one of the lowest human development indicators in Africa, despite the fact that it has been praised as an economic success story. Although the gross domestic product in Uganda is on the increase, the poor are getting poorer and the rich richer (Wabaki, 2006). By applying family planning, countries could overcome poverty and achieve best productivity, because where there are high levels of fertility there is low economic growth and where the fertility rate is lower economic growth is more rapid (Jayaraman, Mishra and Arnold, 2009).

## **2.8. Choice of contraceptive**

The client's choice of a contraceptive method depends on several factors: efficacy, safety, cost, non-contraceptive benefits, and personal consideration (Hatcher, Trussell and Nelson, 2008).

## **2.9. Contraception methods**

There are two approaches to contraceptive methods, namely modern contraceptive methods and natural contraceptive methods.

### **2.9.1. Modern contraceptive methods**

Modern contraception methods can be categorised in several ways. Hormonal methods include oral contraceptives, patches, vaginal rings, intramuscular contraceptives, implants and levonorgestrel intrauterine devices. Non-hormonal methods include male and female condoms and other barrier methods, as well as copper intrauterine devices. Implants and intrauterine devices, and sometimes intramuscular contraceptives are also categorised as long-acting, reversible contraceptive methods. Surgical sterilisation is a permanent method of family planning (Tsui, McDonald-Mosley and Burke, 2010).

#### **2.9.1.1. Oral contraception**

There are two principal types of oral contraception: progestogen-only contraceptive and combined oral contraceptive. All are pills that have to be taken once a day at a fixed time. The packets contain 28 pills. Individuals can buy it at pharmacies without medical prescription but it can also be obtained free of charge at hospitals and clinics. These pills prevent pregnancy but not HIV/AIDS or other sexually transmitted infections (STIs) (Cape Gateway, 2006; Freeman and Shulman, 2010).

#### **2.9.1.2. Contraceptive injections**

Contraceptive injections are available in two types: progestogen or Depo Provera (DMPA) and Nur-Isterate. If Depo Provera is chosen as contraception option, it must be given every three months. When Nur-Isterate is to be used, the client must have the injection every two months. DMPA was approved as a contraceptive in 1992 and is the most commonly used intramuscular contraceptive. In the United States, it is estimated that more than two million women, including 400 000 teenagers, use DMPA IM as a contraceptive method (Freeman and Shulman, 2010). These injections do not avert HIV/AIDS or other sexually transmitted infections (STIs).

### **2.9.1.3. Intrauterine device (IUD)**

This method can avert pregnancy for up to five years. It comprises a device that is placed into the uterus by a trained healthcare worker. When the IUD is in place, a check-up is necessary after six weeks and thereafter annually. This method is not advisable for women who have multiple sex partners because of the risk of sexually transmitted infections (STIs) including HIV/AIDS. When it is chosen it must be combined with a condom to prevent contracting STIs. The IUD can be bought at pharmacies and is also available at clinics (Cape Gateway, 2006; Freeman and Shulman, 2010). In Rwanda, IUDs can be bought in pharmacies and at the clinics.

### **2.9.1.4. Emergency contraception**

Emergency contraception is birth control that prevents pregnancy after sex. Emergency contraceptive pills are now available in many countries, but have failed to have the desired impact on unwanted pregnancy rates (Westley and Glasier, 2010). This sort of contraceptive can be used during sexual intercourse at different times, for instance when a woman has been raped, has had unprotected sex, or when the contraceptive method used during sex intercourse did not work perfectly in order to prevent pregnancy; for example when the condom had burst. To increase the efficacy of this method, the emergency contraceptive pill must be taken as soon as possible after having had unprotected sex. It is advisable to use the emergency contraceptive pills within three days after sex, because the earlier the pills are taken the better the intended effect. Lack of knowledge continues to be an important barrier in much of the world. For example, the post-coital contraceptive method is still relatively unknown in many countries, according to data from the Demographic and Health Survey and other country-level surveys (Khan, Mishra, Arnold and Abderrahim, 2007). However, research done by Lader (2009) showed that even when knowledge of this type of contraceptive is high, its use often remains fairly low, as in the United Kingdom and Northern Ireland, where 91% of women had heard of 'the morning-after pill' but only 7% had used it in 2008. The pills are available at pharmacies and no medical prescription is required. They can also be obtained free of charge from hospitals and clinics. It is advisable that an IUD be inserted within five days after having had unprotected sex. Although the IUD is not designed for emergency contraception, it can act within five days as emergency contraceptive. When pregnancy is suspected as a result of a delay in using the emergency contraceptive method,



termination of pregnancy may be the last solution. Termination of pregnancy is not seen in the same light all over the world. In countries like South Africa, it is permitted, but in Rwanda, it is prohibited.

#### **2.9.1.5. Condom**

There are two types of condoms: male and female. Condoms play a significant role in the prevention of sexually transmitted infections, including HIV/AIDS, as well as unplanned pregnancies. Among the modern contraceptive methods, the condom is the only method that gives dual protection. Condoms are available in shops and at almost all pharmacies at a low price. At some public venues and at clinics, male condoms are free of charge. Female condoms are sold at some pharmacies and are available free of charge at a few designated clinics.

Research by Frost and Darroch (2008) in the United States showed that condom use was more common among black and Asian women and other women than among whites (43–52% versus 28%), and among unmarried and non-cohabiting women than among their married counterparts (39% versus 31%). In 2003, the condom accounted for 5.7% of worldwide use of contraception. Glasier (2010) states that in Northern Europe, between 10 and 22% of married couples use condoms, while in Eastern Africa, it is 1.2%, and in most countries in that region, the figure is well below 1%.

#### **2.9.1.6. Sterilisation**

This type of contraceptive is a permanent method for both men and women, and is available on request. The basic age considered to request this method is eighteen years old. This contraceptive method does not affect a person's sex life. It is a simple and short operation, but before the operation, counselling is required and clients have to sign a consent form. Sterilisation is available free of charge at hospitals and at some community health centres. The operation is done by a doctor. This method gives peace of mind because people can use this method and will not be afraid of unplanned pregnancies. Similar to other contraceptive methods, sterilisation is effective to prevent pregnancy but cannot avert sexually transmitted infections including HIV/AIDS.

The intervention names are different. The operation for a male is called a vasectomy, which is normally done while the man is awake, using general or local anaesthetic (Mork, 2011). One or two very small holes are made in the skin close to the testicles. The sperm tubes (vas deferens), which carry sperm from each testicle, are tied and cut. As a precaution, clients have to refrain from sexual intercourse for the next 15 to 20 days, and for three months after intervention, people are advised to use a combination of other methods because a vasectomy is not effective directly after the operation. The sperm count is a crucial test in order to make sure that there are no more sperm from the tubes.

The intervention performed on women is called tubal ligation. During the operation, the fallopian tubes are tied and cut. This stops the fallopian tubes from carrying the eggs from the ovaries to the uterus; consequently, it prevents eggs from becoming fertilised by spermatozoids, thus eventually preventing pregnancy (Mork, 2011). With this method, there is a little possibility of failure (Cape Gateway, 2006; Tiwari, 2010).

#### **2.9.1.7. Implants**

The technology of implantable contraception is relatively new and has evolved over the years. The first system developed, Norplant, was initially marketed in Finland in 1983 and consisted of six levonorgestrel contraceptive implants effective for a period of five years. Improvement in technology soon made it possible to reduce the number of implants. Norplant had six rods, and was replaced by Jadelle, which has two silicone rods (these rods release the same amount of contraceptive steroid through the six rods) (Brache, Faundes, Alvarez and García, 2006). Modern implantable contraceptives provide women with safe, long-acting fertility control that is rapidly reversible when the device is removed (Hickey and D'Arcangues, 2002).

Westley and Glasier (2010) argue that one reason for low correct use of family planning is poor understanding of fertility, contraception and pregnancy risk that seems widespread in both developed and developing countries.

#### **2.9.1.8. Abortion**

Abortion is considered differently in different societies in the world. Some people see abortion as killing, while others view it as part of a family planning method. Worldwide, abortion is used by 63% of women and is now available on request for about 40% of women (Bristow, 2010). Rwanda is one of the countries that consider abortion as killing. Ndikubwayezu (2009) and Nambi (2009) state that Rwanda is still listed as one of the countries where abortion is illegal and punishable under the penal code. However, abortion recently accounted for 50% of women who die from reproductive health complications. Despite the fact that abortion is illegal in Rwanda, the results of a study by Basinga, Moore, Singh, Audam, Carlin, Birungi and Ngabo (n.d.) showed that 10 out of 1 000 women aged 15–49 were treated for complications of abortion in health facilities. In health facilities, women are admitted when they experienced complications due to the incomplete or poor practice of these illegal abortions. Many of these women reported too late for assistance due to possible shame of what they did and fear of being prosecuted. If it is legal, they may come when they notice that fertilisation had occurred. This might be an indication that the number of unsafe abortions in Rwanda is even higher when it includes women who do not experience complications and women who experience complications but do not access health services (Basinga, Moore, Singh, Audam, Carlin, Birungi and Ngabo, n.d.). Mutesi (2011), a journalist, reported two cases of women arrested for abortion in Rwanda in 2011, where one of them said that she decided to abort the foetus because the man responsible had abandoned her. The second one said that she did it because it was an unwanted pregnancy. In contrast, abortion in South Africa is legal. If unintended pregnancy is assumed, the last resort is to terminate that pregnancy. In Rwanda, abortion is legal when the life of the mother is compromised or when medical examinations show that the foetus has abnormalities that would make it impossible for the baby to survive after his/her birth Mutesi (2011).

The anti-abortion activists, Dorenbos and Van Vuuren (2003) are outspoken when they argue that, when considering human rights, an abortion is discrimination against the life of the unborn child. These authors add that the life of a human being is now lower than that of an animal when one takes into account how an animal is respected. If any animal species is in danger the world hastens to secure it; human beings, however, are cruelly and torturously killed in their mothers' wombs. This is remarkable when one considers the activity of an organisation such as

Greenpeace who swiftly become active to save the world's endangered species (Dorenbos and Van Vuuren, 2003). The researcher is in agreement with those authors because life starts with fertilisation and continues till the person dies. In the fight against abortion, we may educate the community about the emergency contraceptive methods. We believe that such cases occur unwillingly, but with enough knowledge of family planning methods, we could reduce the rate of abortion.

The fact that the human foetus is not easily seen, weak and vulnerable is no reason to override or ignore its right to life. Because of the mental and physical immaturity of a child, care and protection is needed before as well as after the child is born. A woman's life is considered more precious and worthy than that of the foetus without any thought for the unborn innocent human being. Women have the same rights as other people but these are often seen to be in conflict with those of their unborn children as stated by Human Rights (n.d). We may not ask for rights as well as justice for ourselves while taking away the rights of those who are most dependent and innocent. In trying times of dealing with an unwanted pregnancy, society should empathise with women as well as their unborn children, supporting them during this period so that they do not feel abandoned and alienated. The beginning of life starts at conception. None of us has an utter right to control our bodies as many abortion-rights activists proclaim. This society plays a very significant role in sustaining and saving life. Society forbids us to use our bodies to harm others or to harm ourselves. A woman does not have the right to kill or to cause harm to the unborn baby living within her womb (Human Rights, n.d). It is not acceptable, in other words, for one individual to trade off the life of another person against his or her proper social, health or economic welfare. The only case when one life can be taken legitimately is when another life is stake (Human Rights, n.d.).

### **2.9.2. Natural contraceptive methods**

This type of contraceptive method includes abstinence, withdrawal (fertility awareness, outercourse), and continuous breastfeeding (lactational amenorrhea method) (Stacey, 2008).

### **2.9.2.1. Lactational amenorrhea method**

The lactational amenorrhea method is a natural contraceptive method that requires three conditions to be simultaneously met: the baby has to be less than six months of age, the mother is still amenorrhoeic, and she practices exclusive or quasi-exclusive breastfeeding on demand, day and night. Infants who are breast-fed exclusively for six months experience fewer gastrointestinal tract infections and suffer no deficits in growth. For these important advantages, the method has been proposed as an effective family planning option in resource-constrained settings, where it is difficult to obtain contraceptives, where there is a low rate of use, or where ineffective contraceptive methods are applied. The efficacy of the lactational amenorrhoea method in preventing pregnancies is similar to that of modern contraceptives (Romero-Gutiérrez, Vaca-Ortiz, Ponce-Ponce de León and López-Martínez, 2007). This is according to literature; however, in real life this method is not effective (Jackson, 2005). If women are interested in this method, detailed information, including research findings, can be given to them so that they may judge the suitability of the method (Jackson, 2005). Research by Türk, Terzioğlu and Eroğlu (2010) in Turkey found that the pregnancy rate of women using this method was 32.8%. In general, when the lactational amenorrhea method is used under the three conditions mentioned above, the pregnancy rate can be as low as 2% (Pallone and Bergus, 2009).

### **2.9.2.2. Withdrawal**

Withdrawal is a traditional contraceptive method used in both developing and developed countries. To prevent conception, the male partner 'pulls out' after limited unprotected intercourse, prior to ejaculation. However, the failure rate of this contraceptive method is higher than barrier and hormonal methods of birth control, but has demonstrated efficacy in preventing pregnancy if exercised properly (Horner, Salazar, Romer, Venable, DiClemente, Carey, Valois, Stanton and Brown, 2009). Stacey (2008) defines withdrawal as a behavioural action where a man pulls his penis out of the vagina before he ejaculates. He also explains the risk of pregnancy from this method, where he argues that the method is not reliable because a male may eject pre-ejaculate fluid while he is aroused and still inside the vagina. Stacey (2008) reports that this fluid can contain at least 300 000 sperms and that the method relies completely on self-control. Even if the man ejaculates outside of the vagina, sperm can swim, so semen anywhere near the vagina

can still lead to pregnancy. When using this method, ejaculation must be far from the vagina. Men tend to like this method because it affords them power as primary decision-maker to childbearing, timing and spacing. One woman said, “My husband disagrees with the use of the oral pills until we have two children.” Another said, “When I got married, my husband told me that withdrawal was better. However, later I understood that his preference was due to the fact that he wanted to have a power to control the childbearing time and the number” (Rahnama et al., 2010:289). In contrast, Glasier (2010) states that 26% of couples in Turkey rely on the withdrawal method, while in Ethiopia and South Africa no one apparently uses withdrawal. The withdrawal method in Rwanda is used at 3% according to Population Council (2008).

### **2.9.2.3. Fertility awareness**

Fertility awareness methods of family planning are methods that use physical signs and symptoms that change with hormone fluctuations throughout a woman’s menstrual cycle to predict her fertility. The unifying theme of the fertility awareness-based method is that a woman can reduce her chances of falling pregnant by abstaining from coitus or using barrier methods during times of fertility. Natural family planning is a subset of the fertility awareness-based method that specifically excludes concurrent use of all other forms of contraception, including barriers, as a supplement to the observation of fertile signs. Pregnancy is avoided through abstinence alone (Pallone and Bergus, 2009).

Within this method, there are different methods to determine fertility time, i.e. the calendar method (this is practiced by counting the days in a woman’s cycle, with the beginning of menstruation being day one for each cycle. Days 12 to 19 inclusive are considered fertile), basal body temperature methods (body temperature elevation identifies fertility), cervical secretion method (observation of cervical secretion characteristics: fertile cervical secretions are clear, wet, slippery, stretching and changing in quality; infertile cervical secretions are dry, sticky, cloudy and do not stretch) (Stacey, 2008; Pallone and Bergus, 2009).

#### **2.9.2.4. Abstinence**

Abstinence is defined as not having any type of intercourse or sex play with a partner. It is the only birth control method that is 100% effective in preventing pregnancy and sexually transmitted infections (Stacey, 2008).

#### **2.9.2.5. Outercourse**

Outercourse is any type of sexual play without vaginal intercourse. This includes kissing, erotic massage, mutual masturbation and rubbing sex. Stacey (2008) argues that, although this method is usually 100% effective, pregnancy can ensue if semen or pre-ejaculate fluid gets into the vagina (the man ejaculating too close to the vagina or the woman rolling onto it). Moreover, this method cannot prevent sexually transmitted infections, including HIV/AIDS, due to there being skin-to-skin contact or the exchange of bodily fluids (Stacey, 2008).

### **2.10. Family planning and Millennium Development Goals**

Family planning is considered as an important element of reproductive health and primary health care that may play a significant role in lessening newborn and maternal mortality as well as morbidity. In addition, it reduces the risk of transmission of HIV/AIDS. It contributes to the attainment of the Millennium Development Goals as well as targets of the Health for All Policy for the 21<sup>st</sup> century in the world and particularly the African region (WHO, 2008b).

#### **2.10.1. End poverty and hunger**

The gross national product per capita is associated with the availability of modern contraceptive methods. Furthermore, family planning decreases cumulative demands for increasingly scarce food products. Better birth spacing reduces the incidence of low birth weight and poor maternal nutrition. Family planning results in more wealth and less hunger (Cates, 2010).

### **2.10.2. Universal education**

Girls often have to drop out of school due to unintended pregnancies or to help care for younger siblings. From observation, it is clear that more than half of all African girls do not even complete primary school (Lloyd and Mensch, 2008). Lloyd and Mensch (2008) believe that family planning prolongs education and helps girls in particular to achieve their dreams for the future.

### **2.10.3. Gender equality**

Unplanned pregnancies divert women from other life plans. In Egypt, women who do not use contraception are usually unemployed compared to those who use contraceptive methods. In Indonesia and Brazil, women use permanent or long-term contraceptive methods, which are associated with a great probability of working for a wage (Cates, 2010). Using family planning empowers women; involving men in family planning can lead to changes in gender norms. Cates (2010) argues that empowering women in many ways, counting their capability to achieve the family size they yearn for is the most significant driver of modern development efforts. Family planning generates numerous health as well as social benefits. Furthermore, besides reducing unwanted pregnancies and maternal death, as well as enhancing educational and economic opportunities of women, family planning contributes to gender and societal equity (Yue, O'Donnell and Sparks, 2010).

### **2.10.4. Child health**

Child health is one of the Millennium Development Goals. All countries took an oath to make sure that child mortality is reduced to two-thirds from 1990 to 2015. In the low- and middle-income countries, child mortality continues to increase. The worst situation is observed in the poorer countries where child mortality rates remain high. Birth spacing is one component of family planning, and family planning in general has been proved to be an antidote for the mortality rate. The need to sustain birth spacing and the provision of family planning services is a crucial element to have children with good health (Bryce, Black, Walker, Bhutta, Lawn and Steketee, 2005). If unintended pregnancies are prevented, around 1.2 million child mortalities would be avoided globally each year. Life within families will be better, which means eating



properly, wearing proper clothing, access to health facilities and education of children will be on much better. If we could meet all demands for contraception, another 640 000 newborn deaths could be prevented. Family planning increases children survival as documented by the WHO (2009a) and Cates (2010).

#### **2.10.5. Maternal health**

Family planning is included in universal access to reproductive health that is indicated in Millennium Development Goals number 5. In addition, if a woman wants to end an unplanned pregnancy, the risks associated with unsecured abortions is among the foremost causes of maternal death, particularly in younger women. Cates (2010) adds that, if a woman in inadequately resourced areas that lack safe delivery services wants to continue with a pregnancy, the risk of mortality is also high, as are morbidities that are often permanent.

#### **2.10.6. Combat HIV/AIDS**

Family planning promotes reproductive health and saves lives by lessening the dispersion of sexually transmitted infections, including HIV/AIDS (Smith et al., 2009). Some contraceptive methods like the condom or abstinence play a double role. For instance, when one is using a condom for family planning purposes, it may also protect the partner against contracting HIV/AIDS. A woman living with HIV and who has an unplanned pregnancy is at high risk of infecting her child. Preventing unplanned pregnancies among women living with HIV (being HIV-positive) reduces the number of HIV-positive births and is three times more effective as a prevention strategy than supplying antiretroviral treatment to mothers during pregnancy, birth and breastfeeding (WHO, 2009b).

#### **2.10.7. Environmental sustainability**

Many women wish to have a smaller number of children; however, an estimated 217 million women experience unmet needs for contraception (Wire, 2009; WHO, 2010). A family with fewer children needs less food, land, and water and puts less pressure on a country's forests and tillable land. Moreover, family planning is up to five times less expensive than the conventional

green technologies for lessening atmospheric carbon dioxide that leads to climate changes (Wire, 2009; WHO, 2010).

#### **2.10.8. Global partnership**

Family planning programmes require collaboration from a multidiscipline of departments for example at national as well as at global level. At national level, it can be stipulated at community level and government level. If a health plan is not supported by the government of that country, it may fail. At global level, international agencies can play a significant role in the investment in family planning programmes. Some countries are poor and they can see family planning as another burden that consumes the government's money. For those countries may to succeed with family planning, help from outside is needed. Over the last four decades, global partnerships depicted by global investment cropped up in family planning programmes (WHO, 2010).

#### **2.11. Conclusion**

The literature described the components of family planning, the benefits and potential impact of family planning, population perceptions about family planning, reasons for non-use of family planning, family planning and HIV/AIDS, family planning and poverty, choice of contraceptives, contraceptive methods and, finally, family planning and the Millennium Development Goals. According to the literature reviewed, the contraception practice in a country is important and influences the population's welfare and family health. The following section will discuss the methodology used to collect data.

## **Chapter three: Methodology**

### **3.1. Introduction**

This chapter discusses the research design and methodology used in the study. This includes the paradigm, population, data collection tools, data collection procedures, validity and reliability and ethical consideration.

The methodology used made it possible to attain the research objectives.

### **3.2. Paradigm**

In this study, a positivist paradigm (Weaver and Olson, 2006) was used with deductive logical reasoning. This paradigm makes the assumption that there is an objective truth existing in the world that can be explained and measured scientifically (Matveev, 2002). The data from the participants was objective truths that existed among them and which can be explained and measured scientifically. The researcher was separated from entities who were the subjects of observation.

### **3.3. Research approach**

The researcher used a quantitative approach (Burns and Grove, 2005; Moule and Goodman, 2009) that allowed him to count and measure events and perform a statistical analysis of the body of numerical data. This allowed the researcher to generalise because the measurement was valid and reliable (Alasuutari, Bickman and Brannen, 2008). This approach was used because the data collected using the quantitative approach was clear and very precise and lacked ambiguity (Gilbert, 2008).

### **3.4. Research design**

For this study, a descriptive (Keele, 2011) quantitative approach (Burns and Grove, 2005; Moule and Goodman, 2009) was used in order to understand the phenomenon under investigation. The descriptive study was chosen for this study for the simple reason that it afforded the researcher

the opportunity to gain more information about the characteristics of the topic of interest (Keele, 2011).

### 3.5. Research setting

Nyagatare District was the setting for this research. Nyagatare District is situated in the eastern province of Rwanda, bordered by Gicumbi District on the western side, Tanzania in the east, Uganda in the north and Gasabo on the southern border. Nyagatare District has 630 villages (*Imidugudu*), 106 cells and 14 sectors. The district occupies 1 741 km<sup>2</sup> of land and is inhabited by 291 452 people. The population density is 321 inhabitants per km<sup>2</sup>. Nyagatare District has one hospital and 18 health centres (Nyagatare, Rukomo, Mimuli, Gatunda, Gakirage, Nyakigando, Cyondo, Muhambo, Nyagahita, Tabagwe, Ndama, Karangazi, Muhambo, Bugaragara, Kagitumba, Muriri, Rurenge and Kabuga) (DCDP, 2007).



Figure 3.1 Nyagatare district(DCDP, 2007)

### **3.6. Population**

The population of the study was women of productive age (18–49) living in Nyagatare District, Rwanda. The total population under study was 455 of those using family planning and antenatal clinics at five selected health centres (Rukomo, Rurenge, Bugaragara, Mimuli and Nyagatare). After selecting the health centres, the researcher contacted each health centre to obtain the overall number of people who come in for antenatal and family planning services. The total number found was to be 455, which made up the population size for the study.

### **3.7. Sample selections**

The sample selection was performed by selecting the setting as well as selecting the participants in the study.

#### **3.7.1. The selection of the setting**

The research was conducted at five health centres functioning in Nyagatare District. These health centres represent 30% of all health centres in Nyagatare District, which is an acceptable number for the generalisation of the findings. The selection of health centres in Nyagatare District was made by way of simple random sampling. The researcher obtained a list of all the health centres as the site of research, allocated numbers to each health centre and then put the numbers on separate slips of paper. The researcher deposited the slips of paper in a suitable container (bowl). Thereafter the researcher pencilled in a slip and made a note of its number, and replaced the piece of paper, shook the bowl and selected a second, and a third, and so on until five had been selected. This is called the fishbowl technique (Brink, 2006). In this technique, all health centres had an equal chance of being selected each time because the researcher replaced the previous slip selected.

#### **3.7.2. Selection of participants**

A sample is a subgroup of the population of a researcher's interest (Kumar, 2005). At the health centres, the probability-sampling approach with systematic strategy (Brink, 2006; Kahl, 2011)

was used. During the data collection period, the researcher chose women of reproductive age (18–49) who were present at health centres for family planning and antenatal services by selecting every third person. Interval (K) is calculated by dividing the population by the sample size.

$$K = \frac{\text{Population}}{\text{Sample size}} \leftrightarrow K = \frac{455}{137} \leftrightarrow K = 3$$

The sample of this study was 137 participants from five health centres in Nyagatare District. The sample was obtained from 30% of the study population.

$$\text{Sample size} = \frac{\text{Population} \times 30}{100} \rightarrow \text{Sample size} = \frac{455 \times 30}{100} = 137$$

To reach this sample size, participants were selected according to inclusion and exclusion criteria. The criteria that were used were the following:

### **3.7.2.1. Inclusion criteria**

The following women were included:

- all women attending family planning and antenatal services in the age group 18–49 years old were included in this research;
- women attending family planning and antenatal services, who were willing to participate in research; and
- women attending family planning and antenatal services, who were willing to sign the informed consent.

### **3.7.2.2. Exclusion criteria**

- individuals with mental disabilities were excluded because of their vulnerability and inability to make decisions on their own;
- women younger than 18 years were excluded from the research because they were minors;

- women older than 49 years were excluded from this research because they were not of child-bearing age;
- women who were not living in Nyagatare District could not be part of the research; and
- woman who participated in the pilot study could not take part in the research.

### **3.8. Data collection**

In this sub-section, the focus will be on data collection techniques and the data collection instrument.

The researcher used a self-report questionnaire (Brink, 2006) to collect the data. This technique is used to explore participants' beliefs, knowledge and thoughts on contraceptive methods they use. The same author stated that this technique is the most effective method to obtain such information, namely to direct questions at the individuals concerned. It took approximately 20 minutes to complete the questionnaire.

#### **3.8.1. Data collection instrument**

This study used a self-report questionnaire. A questionnaire was designed by the researcher in accordance with the research question and the conceptual framework based on the tool used by USAID (Undie and RamaRao, 2010). This questionnaire was used to answer the following research questions:

- What family planning methods are used by women in Nyagatare District?
- What is the perception of women living in Nyagatare District regarding family planning methods?
- Which socio-demographic factors are associated with the family planning methods?
- Which family planning methods are not used in Nyagatare District, Rwanda?
- What are the sources of information on family planning to the women living in Nyagatare District, Rwanda?

This tool was used for the contribution to global knowledge where the main aim was to prevent occurrence of pregnancy. The section modified is the section about family planning (Undie and RamaRao, 2010). The questionnaire comprised of six sections, namely

- Section A: socio-demographics;
- Section B: perception of family planning;
- Section C: information source;
- Section D: family planning methods;
- Section E: reproduction; and
- Section F: abortion.

The questionnaire was designed in English and then translated into Kinyarwanda for participants who could not speak or understand English, thus allowing them to answer in their mother tongue. The translation was made by three Rwandan students, and then all translation were put together in order to agree on the proper, unambiguous words to use. After agreement, the final version was typed by researcher.

### **3.9. Validity and reliability**

#### **3.9.1. Validity**

This is the way to illustrate whether the instrument is really measuring what it set out to measure or intended to measure as this shows whether the results are true. Validity is an indication of whether the research truly measures that which it intended to measure or how truthful the results are (Golafshani, 2003; Twycross and Shields, 2004; Gerhardt, 2004; Polit and Beck, 2008). Content validity is used to show the readers how the tool responds to the objective of the research interest. Twycross and Shields (2004) point out that content validity demonstrates whether the tool appears to others to be measuring what it says it does.



**Table 3.1 Content validity**

<b>Objectives</b>	<b>Conceptual framework content</b>	<b>Question</b>
To identify methods used in family planning among the women in Nyagatare District, Rwanda.	Perceived benefits versus barriers to family planning services, perceived threat of condition, cues to action: media, information, education	15, 16, 17, 20, 21, 23, 24, 25.
To explore the perception regarding family planning methods among women living in Nyagatare District.	Perceived susceptibility/seriousness of condition, socio-economic factors, age, personality, knowledge, cues to action: media, information, education; likelihood of behaviour change	1, 2, 3, 4, 5, 6, 7, 8, 9, 10 11, 12.
To determine the socio-demographic factors that influence women's choice of contraceptive methods in Nyagatare District, Rwanda.	Socio-demographic factors	1, 2, 3, 4, 5, 6, 7 plus results from analysis
To identify sources of information on family planning methods among women living in Nyagatare District, Rwanda.	Cues to action: media, information, education.	13, 14

**3.9.1.1. Internal validity**

The words used in the research tool were simple and comprehensive to avoid ambiguity among respondents. By avoiding confusion when responding to the questions, the findings reflected the reality instead of extraneous variables. Internal validity is described as the extent to which the findings reflect the reality rather than the results of extraneous variables (Burns and Grove, 2005). The questionnaire covered the methods used in family planning, women's perceptions regarding family planning and factors influencing women to choose contraceptive methods.

### **3.9.1.2. External validity**

The research findings had external validity because the sample size was representative of the population living in Nyagatare District and using family planning and antenatal services, namely women of reproductive age (18–49). External validity is defined by Polit and Beck (2008) as the extent to which an event or a relationship observed in the study holds true over variation in condition, people and settings, so that it can allow generalisation.

### **3.9.2. Reliability**

Reliability is dependability and consistency of a research tool used to measure a variable (Brink, 2006). There are many types such as internal consistency, stability and equivalence (Considine, Botti and Thomas, 2005). In this study, the instrument was tested and retested during the pilot study of ten women of productive age (18–49) who did not participate in the final data collection process of this study. The pilot study is an important stage for every new survey instrument. The pilot study is a small-scale preliminary study conducted before the main research with the intent to check feasibility of the instrument and to avoid waste of money and time as a result of inadequately designed research, as argued by Haralambos and Holborn (2000).

### **3.10. Data collection procedure**

The researcher recruited one nurse at each health centre to assist with data collection. The researcher selected a qualified nurse who understood the questionnaire as intended by the researcher. Trained nurses helped participants who could not read to fill in the questionnaire. Participants dropped the completed questionnaires in boxes that the researcher made available during data collection. It took around 20 minutes to fill in the questionnaire.

The data was collected over a period of three weeks by the researcher and one nurse from each health centre assisted. The researcher then collected all the answered questionnaires from the health centres.

### **3.11. Data analysis**

The data was analysed using the Statistical Package for Social Sciences (SPSS), version 19.0. To make data capturing and auditing easy, the data was coded. Descriptive statistics, such as frequencies and percentages, was used to synthesise the data. Fisher's Exact Test was used to test for associations between socio-demographic factors and use of family planning. Basic statistics and frequencies were considered and are presented in tables or figures.

### **3.12. Ethical consideration**

Ethical principles (Brink, 2006) have to be adhered to in all research done by students, staff or other persons. Cautious consideration to ethical issues were taken into consideration because we reside in a world with multifaceted interactions that have an impact on the health and wellbeing of the population of all nations regardless of individual or national prosperity (Harrowing, Mill, Spiers, Kulig and Kipp, 2010). The researcher made sure he protected the dignity and welfare of the participants in accordance with ethical principles. Ethical approval was obtained from the University of KwaZulu-Natal Ethics Committee. In addition, permission to conduct research was obtained from the General Director of Nyagatare District as well as the person incharge of each health centre. Ethical consideration is discussed in the following sections (Ford, Mills, Zachariah and Upshur, 2009).

#### **3.12.1. Collaborative partnership**

The research proposal was submitted to the University of KwaZulu-Natal Ethics Committee for approval, and permission to conduct the research in Nyagatare District was requested from the authorities of that district. Participants were informed before they filled in the questionnaire that there would be no monetary benefits. In Rwanda, the research proposal was submitted to Nyagatare District and permission to conduct research was obtained from the authorities of the district.

### **3.12.2. Social value**

The findings from the current research will be of benefit to the community in the long term as it will inform policy-makers and the health services to enhance family planning services and resources. It will also benefit the development process of the country. There was no exposition to any hazardous substances, because the research design was not experimental.

### **3.12.3. Scientific validity**

The research results will be communicated to the Rwanda government, to the Nyagatare District authorities and will be submitted for publication in one of the nursing journals. The research will contribute toward addressing the issue of missing the family method at the health centre.

### **3.12.4. Fair selection of study population**

The research population comprised of adult women at reproductive age (15–49). Women below 18 years of age were excluded because they could not make their own decisions. The study did not offer monetary benefits to the participants in order to avoid bias during selection. Ethical procedures and standards were strictly respected, and anonymity was maintained during the data collection period. The questionnaire was designed without a section for participants' names. Participants had the right to participate freely in the research study and could refuse to participate if they felt uncomfortable.

### **3.12.5. Favourable risk–benefit ratio**

To ensure a favourable risk–benefit ratio, the research instrument was designed without a section for participants' names or any kind of identification. No risks or harm were foreseen in the completion of the questionnaire.

### **3.12.6. Independent review**

The researcher worked at the interface of several interests and obligations, including undertaking inquiry, acquiring funding, publishing findings, protecting human subjects and promoting his

career. To overcome these conflicts the researcher treated the participants with dignity. Participants could withdraw from the research at any time. Data will be safely locked in a box accessible only to the researcher and the researcher's supervisor. Before submission, the data will be saved at the researcher residence in a locked box, and after submission, the data will be saved for five years in the supervisor's office at the School of Nursing. After this period of time, the data will be destroyed by the supervisor of this research.

### **3.12.7. Informed consent**

To ensure the right of self-determination of participants, the significance and purpose of the study were explained to the participants before they signed the consent forms. Participants were informed that they could withdraw from the study if they wished to do so. The informed consent form is attached (Appendix12). It was the duty of the trained nurse to explain the purpose of the study to each participant and to make sure that the informed consent was signed beforehand.

### **3.12.8. Respect for recruited participants and study communities**

To ensure the right of self-determination of participants, the significance and purpose of the study were explained to the participants before they signed the consent forms.

### **3.13. Data management**

Data will be kept in a safe place (locked box) which will only be accessible by the researcher and the researcher's supervisor. The final report of findings will be submitted to the School of Nursing, Faculty of Health Sciences at University of KwaZulu-Natal, the Ministry of Health in Rwanda and the Nyagatare Health District in Rwanda. All data and the questionnaires will be kept for five years by the researcher, after which it will be destroyed. The findings will be submitted for publication in one of the accredited nursing journals.

All data will be saved on a CD and kept under lock in the supervisor's office for five years. Hardcopies of all data will be submitted to the supervisor who will shred them after five years.

### **3.14. Conclusion**

This section discussed the research design and research methodology. It also discussed the research instrument and the method of distributing and collecting questionnaires to ensure a high return rate. It further discussed validity, reliability, ethical consideration and data management.

## **Chapter four: Presentation of findings**

### **4.1 Introduction**

Chapter 4 presents the results of the study. The data presented in this section are the results from the research questionnaire. The results are presented in the form of tables and figures where possible.

The themes presented are:

- demographic data;
- perceptions of family planning;
- source of information;
- initiative to provide or to go and seek information;
- family planning methods used among the women living in Nyagatare District;
- how the method is known by the users;
- those who got pregnant while using a family planning method;
- the period spent using any form of family planning method before quitting;
- the number of women who presented with side-effects;
- reasons for not using family planning;
- reasons for pregnancy while using a family planning method;
- methods discussed among women;
- choice of family planning as a result of discussion;
- age at first sexual experience;
- reason(s) for sex at first sexual experience;
- reproductive information; and
- abortion information.

In addition, this chapter presents the results of the statistical test used to test the association between socio-demographic factors and the methods used by women living in Nyagatare District.

## **Pilot study**

The data collection for this study started with a pilot study of 10 women. The participants in the pilot study did not participate in the final research process. This pilot study helped the researcher to establish where the questionnaire was unclear. The pilot showed that there was a gap and that the missed item could assist in giving more complete data. The researcher added one element to the 15<sup>th</sup> question. The element added was that regarding pills as method used by the women for fertility regulation purposes. This item was left behind unwillingly, as it is one of family planning methods. The item was added after testing of the tool and at the retest period, the information was clear to the respondents.

The pilot study informed the researcher that question number 19 was confusing; thus, the researcher added a few words to direct the respondents and to be sure of the consistency of responses (See the questionnaire at Appendix 9). The words added were *if no, go to 21*.

## **4.2 Results**

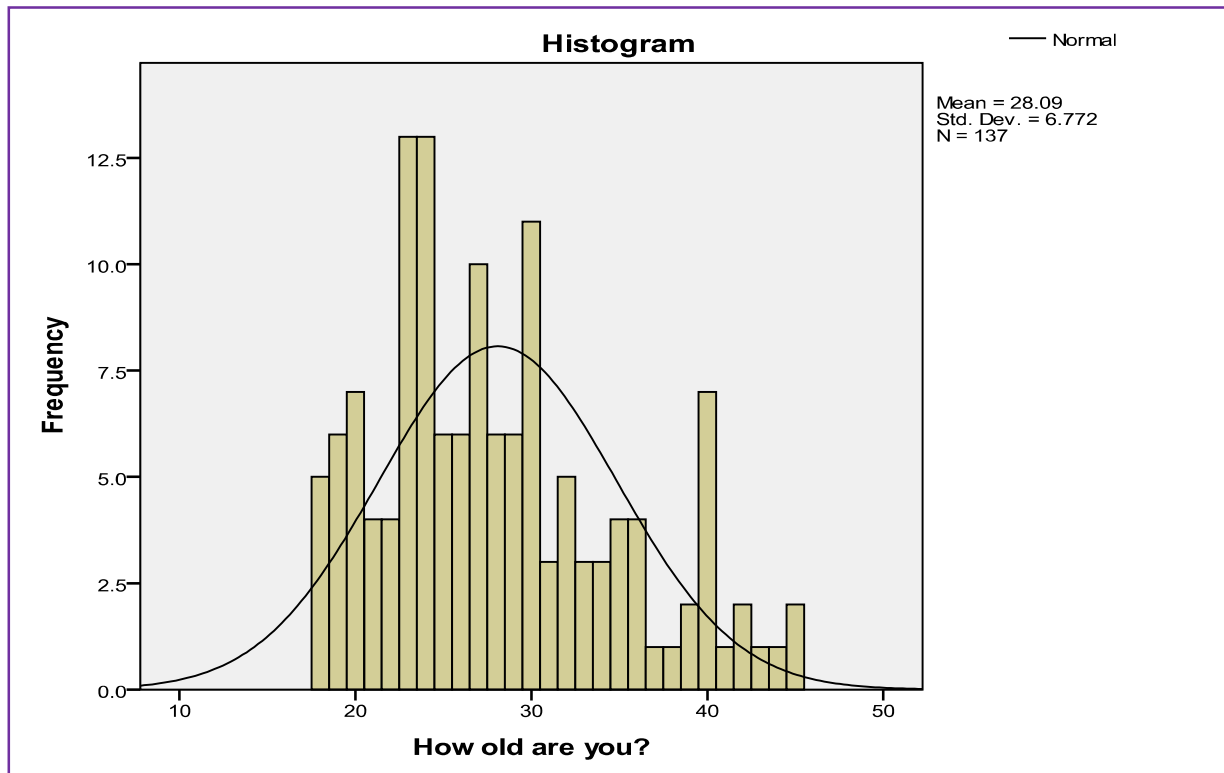
### **4.2.1 Demographic data**

Demographic data included age, marital status, educational background, religion, occupation, and number of children in the family.



#### 4.2.1.1 Age

A composite histogram denotes descriptive statistics of the sample by age, as depicted in Figure 4.1.



**Figure 4.1 Age of family planning participants, women living in Nyagatare District, 2011**

The age of participants varied from 18 years to 45 years old. The mean age was 28.09, the range age was 27 years, and the median age was 27 years. The data shows that the bimodal element is 23 and 24 years.

#### 4.2.1.2 Marital status, education background, occupation and religion

Table 4.1 shows marital status, educational background, occupation and religion of participants of this study.

**Table 4.1 Demographic data**

<b>Demographic data</b>	Element of demographic data	Frequency	Percentage
<b>Marital status</b>	Single	12	8.8
	Married	117	85.4
	Widow	3	2.2
	Divorced	5	3.6
<b>Educationalbackground</b>	None	27	19.7
	Primary	85	62
	Secondary	25	18.2
	Tertiary	0	0
<b>Occupation</b>	Unemployed	8	5.8
	Trader	9	6.6
	Farmer	104	75.9
	Stockbreeder	4	2.9
	Public worker	9	6.6
	Private worker	3	2.2
<b>Religion</b>	None	9	6.6
	Christian	117	85.4
	Muslim	10	7.3
	Traditional indigenous beliefs	1	0.7

In terms of marital status, the highest number was for married women at 85.4% (n=117), widows at 2.2% (n=3), singles at 8.8% (n=12) and divorced women at 3.6% (n=5).

The educational background shows a high number of educated participants at primary level (62%, n=85), secondary level (18.2%, n=25) and uneducated (19.7%, n=27). There were no participants educated up to tertiary level.

The occupation of participants varied. Of the participants, 75.9% (n=104) were farmers, 6.6% (n=9) were traders, 6.6% (n=9) were public workers, 2.9% (n=4) were stockbreeders, 2.2% (n=3) were private workers, and 5.8% (n=8) of the women who were present during the data collection period were unemployed.

The majority of participants were Christians (85.4%, n=117), followed by Muslims (7.3%, n=10), traditional indigenous beliefs were represented by 0.7% (n=1), and 6.6% (n=9) of the participants had some other type of religion.

#### **4.2.1.3 Number of children by family and the wishes of having more children**

The number of children per family varied from none to seven. Out of a total of 137 participants, there were 7 families (5.1%) with seven children, 10 (7.3%) families with six children, 12 (8.8%) families with five children, 19 (13.9%) families with four children, 17 (12.4%) families with three children, 21 (15.3%) families with two children, 33 (24.1%) families with one child, and 13.1% with no children. Of the participants, 10.9% (n=15) wished to have more children. The total number of living children is 371.

#### **4.2.2 Perceptions of family planning**

Of the 137 women who had answered the questionnaire, 128 (93.4%) knew about family planning. The women viewed family planning as birth spacing, use of contraception, few children, and prevention of pregnancy, pills, condoms and injections. All the women presented their views to all the questions. Of these, 117 (85.4%) concurred that family planning is birth spacing, while 104 (75.9%) viewed family planning as use of contraception, 107 (78.1%) believed that family planning is about having few children, 88 (64.2%) asserted that family planning is prevention of a pregnancy, 76 (55.5%) viewed family planning as use of pills, 69 (50.4%) saw family planning as use of condoms, and 77 (56.2%) saw family planning as use of an injection. Of the women, 97.8% (n=134) agreed that family planning is important.

For Figure 4.2, the statements were too long, and in order to allow the figure to accommodate all sentences, the research had to use abbreviations for each statement.

The abbreviations are the following:

FC = Family planning helps to save money because the clinic charge of delivery is costly

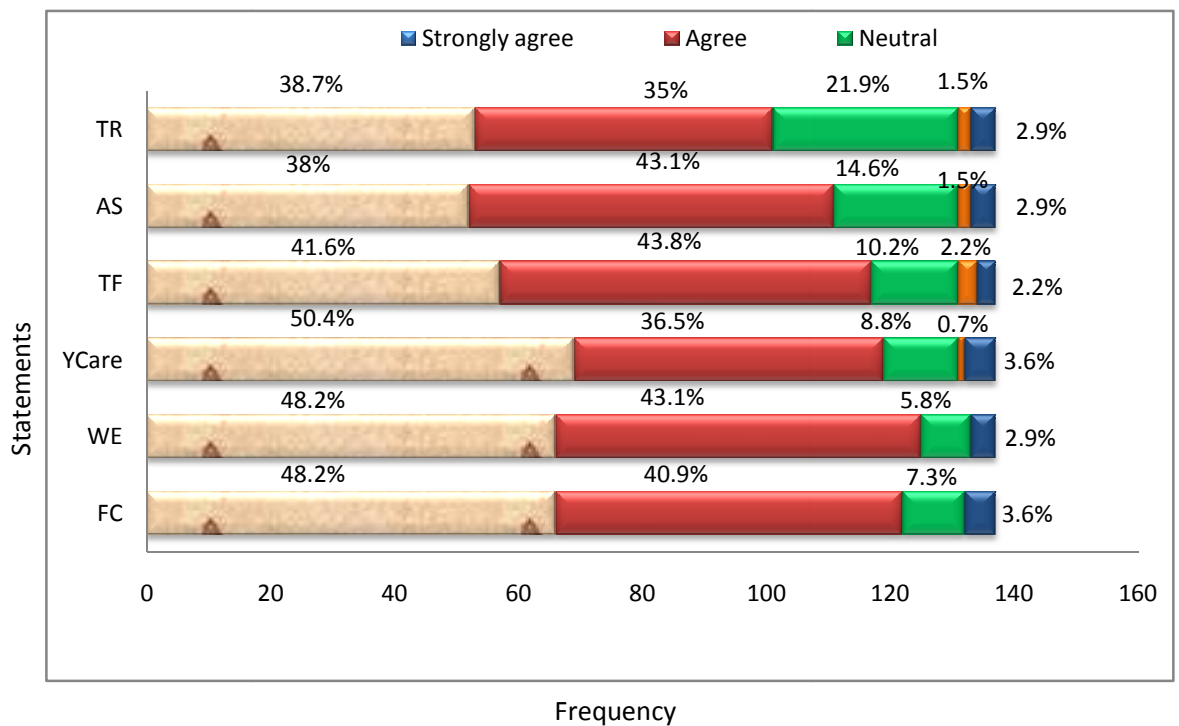
WE = Woman becomes pregnant when she is prepared enough

Y Care = You can limit the number of children that you are able to take care of (nutrition, education).

TF = Women's ability to choose the number and spacing of pregnancies plays a significant role in the general health and wellbeing of women, children and family.

AS = A key to good reproductive health is related to reproductive decision-making, a woman's ability to make a fully informed choice about her reproductive life, to receive information and to have access to family planning methods and services.

TR = There is a myriad of risk factors affecting reproductive health resulting from inadequate levels of education/awareness and limited access to information on sexual and reproductive health and rights. Therefore, education on sexual health and related rights should be included in the school curriculum.



**Figure 4.2 Perception of family planning according to the statements, Nyagatare District 2011**

FC = participants who strongly agree with the statement = 66 (48.2%), agree = 56 (40.9%), neutral = 10 (7.3%), disagree = 0 (0%) and strongly disagree = 5 (3.6%).

WE = participants who strongly agree with the statement = 66 (48.2%), agree = 59 (43.1%), neutral = 8 (5.8%), disagree = 0 (0%) and strongly disagree = 4 (2.9%).

Y Care, participants who strongly agreed with the statement = 69 (50.4%), agree = 50 (36.5%), neutral = 12 (8.8%), disagree = 1 (0.7%) and strongly disagree = 5 (3.6%).

TF, participants who strongly agreed with the statement = 57 (41.6%), agree = 60 (43.8%), neutral = 14 (10.2%), disagree = 3 (2.2%) and strongly disagree = 3 (2.2%).

AS, participants who strongly agreed with the statement = 52 (38%), agree = 59 (43.1%), neutral = 20 (14.6%), disagree = 2 (1.5%) and strongly disagree = 4 (2.9%).

TR, participants who strongly agreed with the statement = 53 (38.7%), agree = 48 (35%), neutral = 30 (21.9%), disagree = 2 (1.5%) and strongly disagree = 4 (2.9%).

The participants in each statement were n=137 (100%).

#### **4.2.3 Source of information**

Table 4.2 presents the source of information, where the participants obtained information regarding family planning.

**Table 4.2 Source of information**

Source of information	Yes or not	Frequency	Percentage
Health centre	Yes	121	88.3
	No	16	11.7
Hospital	Yes	46	33.6
	No	91	66.4
Radio	Yes	101	73.7
	No	36	26.3
Television	Yes	32	23.4
	No	105	76.6
Private	Yes	31	22.6
	No	106	77.4
Friends	Yes	61	44.5
	No	76	55.5
Family members	Yes	37	27.0
	No	100	73.0
Spouse/husband/partner	Yes	69	50.4
	No	68	49.6
Government doctor	Yes	55	40.1
	No	82	59.9
Private doctor	Yes	29	21.2
	No	108	78.8
Nurse	Yes	92	67.2
	No	45	32.8
Community health worker	Yes	88	64.2
	No	49	35.8
Tradition birth attendant	Yes	10	7.3
	No	127	92.7

A health centre is a source of information for 88.3% (n=121) of participants, hospital = 33.6% (n=36), radio = 73.7% (n=101), television = 23.4% (n=32), private clinics = 22.6% (n=31), information from friends = 44.5% (n=61), information provided by family members = 27.0% (n=37), information from a spouse/husband/partner = 50.4% (n=69), government doctors = 40.1% (n=55), a private doctor = 21.2% (n=29), nurse = 67.2% (n=92), a community health

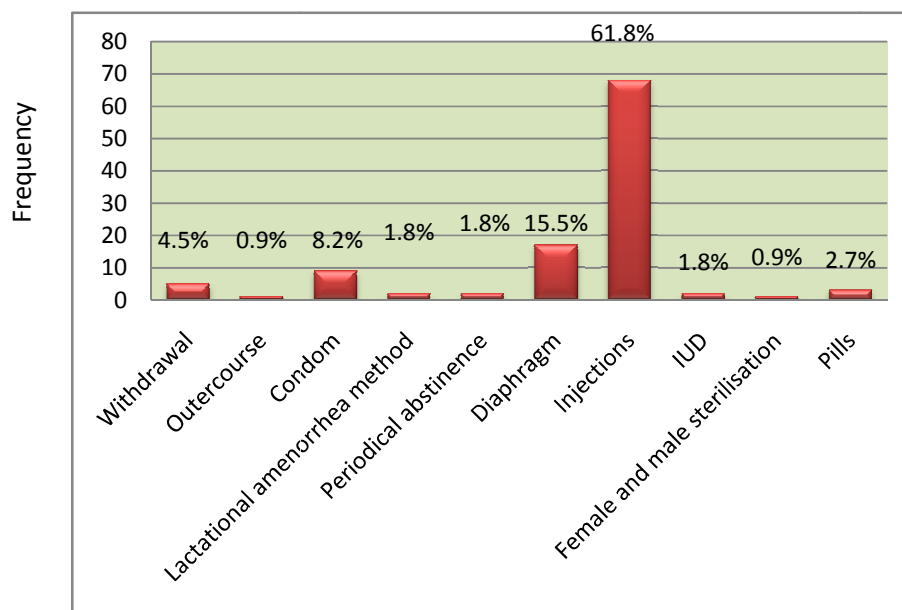
worker = 64.2% (n=88) and traditional birth attendants= 7.3% (n=10). This data is presented in Table 4.2

#### 4.2.4 Initiative to give and to have information

Of the participants, 18.2% (n=25) received information about family planning when they took their own initiative to seek information, while 81.8% (n=112) others did not seek information. Of the participants in the research, 80.3% (n=110) used some form of family planning.

#### 4.2.5 Methods used in family planning

In Nyagatare District, most of the participants use the injection (61.8%) while outercourse was the method with the lowest frequency. All family planning methods that were in use are depicted in Figure 4.3.



**Figure 4.3**Family planning methods women living in Nyagatare District use, 2011



#### **4.2.6 How methods in use became known**

There are different ways the family planning methods that were in use are known. The following table (Table 4.3) shows how the methods in use became known.

**Table 4.3 How method in use is known**

Source of information	Yes or not	Frequency	Percentage
<b>Health centre</b>	Yes	95	69.3
	No	42	30.7
<b>Hospital</b>	Yes	25	18.2
	No	112	81.8
<b>Radio</b>	Yes	48	35
	No	89	65
<b>Television</b>	Yes	13	9.5
	No	124	90.5
<b>Private</b>	Yes	19	13.9
	No	118	86.1
<b>Friends</b>	Yes	28	20.4
	No	109	79.6
<b>Family members</b>	Yes	20	14.6
	No	117	85.4
<b>Spouse/husband/partner</b>	Yes	37	27
	No	100	73
<b>Government doctor</b>	Yes	24	17.5
	No	113	82.5
<b>Private doctor</b>	Yes	16	11.7
	No	121	88.3
<b>Nurse</b>	Yes	48	35
	No	89	65
<b>Community health worker</b>	Yes	45	32.8
	No	92	67.2
<b>Tradition birth attendant</b>	Yes	6	4.4
	No	131	95.6

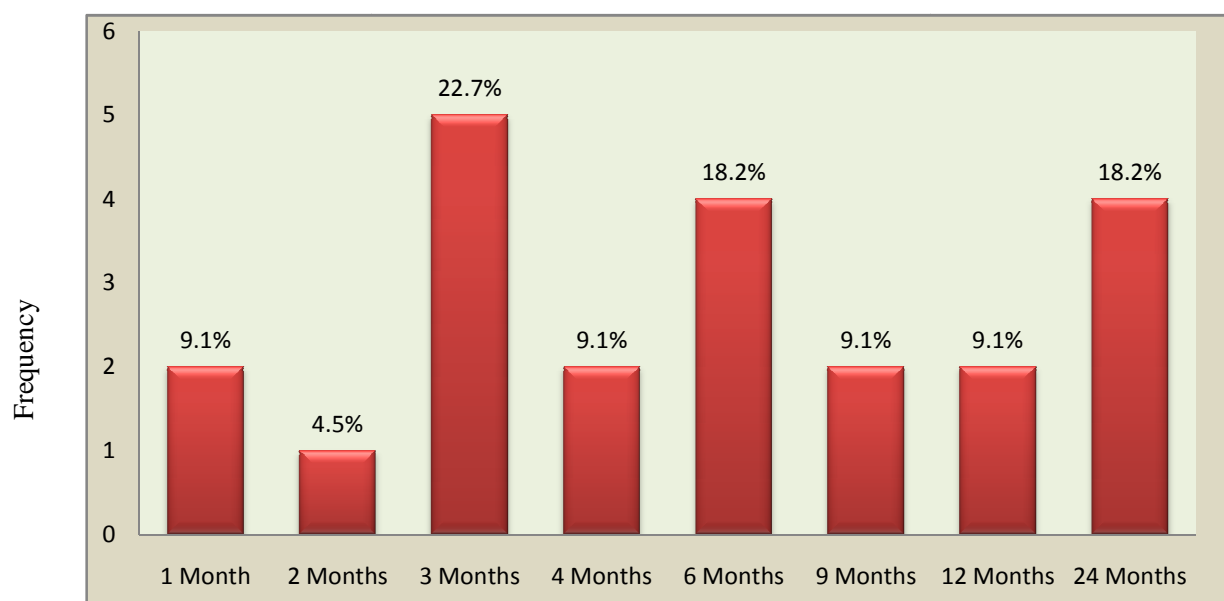
Of the participants, 69.3% (n=95) learnt about the methods they use from a health centre, from a hospital = 18.2% (n=25), the radio = 35% (n=48), television = 9.5% (n=13), private clinics = 13.9% (n=19), friends = 20.4% (n=28), family members = 14.6% (n=20), spouse/husband/partner = 27% (n=37), government doctor = 17.51% (n=24), private doctor = 11.7% (n=16), nurse =

35% (n=48), community health worker = 32.8% (n=45) and traditional birth attendants = 4.4% (n=6). This data is presented in Table 4.3.

#### 4.2.7 Pregnancy on family planning method currently and leave period from using FP method

The participants who had been using family planning and fell pregnant presented 14.6% (n=20).

The period spent using family planning varied from one to 24 months. The high repetitive period the women used a specific method before using something else was 3 months. Participants who quit using family planning methods were 22 (n=137), and the following figure shows the frequency of quitting in different months.



**Figure 4.4 Months to quit family planning method in Nyagatare District, 2011**

#### 4.2.8 Side-effects of FP methods

During data collection, 9.5% (n=13) of participants reported having side effects.

#### 4.2.9 Reason for not using family planning method

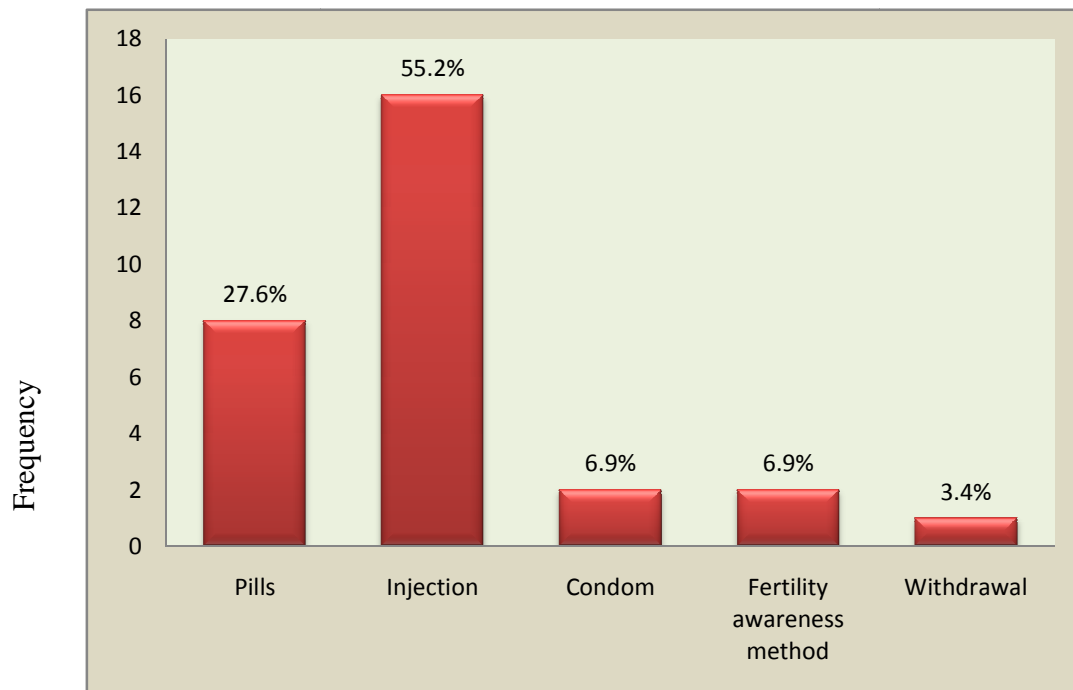
The reason for not using family planning method varied to person to person. Table 4.4 shows the different reasons for not using family planning methods in Nyagatare District.

**Table 4.4 Reasons for not using family planning**

Variables	Yes or no	Frequency	Percentage
Religious prohibition	Yes	53	38.7
	No	84	61.3
Spouse hates it	Yes	50	36.5
	No	87	63.5
Need for male child	Yes	65	47.4
	No	72	52.6
Need for female child	Yes	53	38.7
	No	84	61.3
Fear of side-effects	Yes	54	39.4
	No	83	60.6
Reduce coital satisfaction	Yes	48	35.0
	No	89	65.0
I am afraid to kill my children	Yes	26	19.0
	No	111	81.0
Not aware of the method to be used	Yes	66	48.2
	No	71	51.8

#### 4.2.10 Failure of FP methods

Of the women taking part in the research, 21.2% (n=29) discovered they were pregnant at the same time they were using any form of family planning method. The methods they were using are presented in the following figure.



**Figure 4.5 Failure of family planning methods in Nyagatare District, 2011**

#### 4.2.11 Reason of pregnancy when you are using FP method

Family planning methods prevent occurrence of pregnancy, but sometimes an unplanned pregnancy may occur while using a family planning method. Table 4.5 shows the reason for pregnancy while using a family planning method.

**Table 4.5 Reason for pregnancy when you are using FP methods**

<b>Variables</b>	<b>Yes or no</b>	<b>Frequency</b>	<b>Percentage</b>
Condom burst	Yes	66	48.2
	No	71	51.8
Forgot to use method	Yes	100	73.0
	No	37	27.0
Forgot doctor's appointment for continuation of method	Yes	91	66.4
	No	46	33.6
Method unavailable at health facility	Yes	43	31.4
	No	94	68.6

#### **4.2.12 Discussion on family planning method among women, choice of method and methods accepted as a result of discussion**

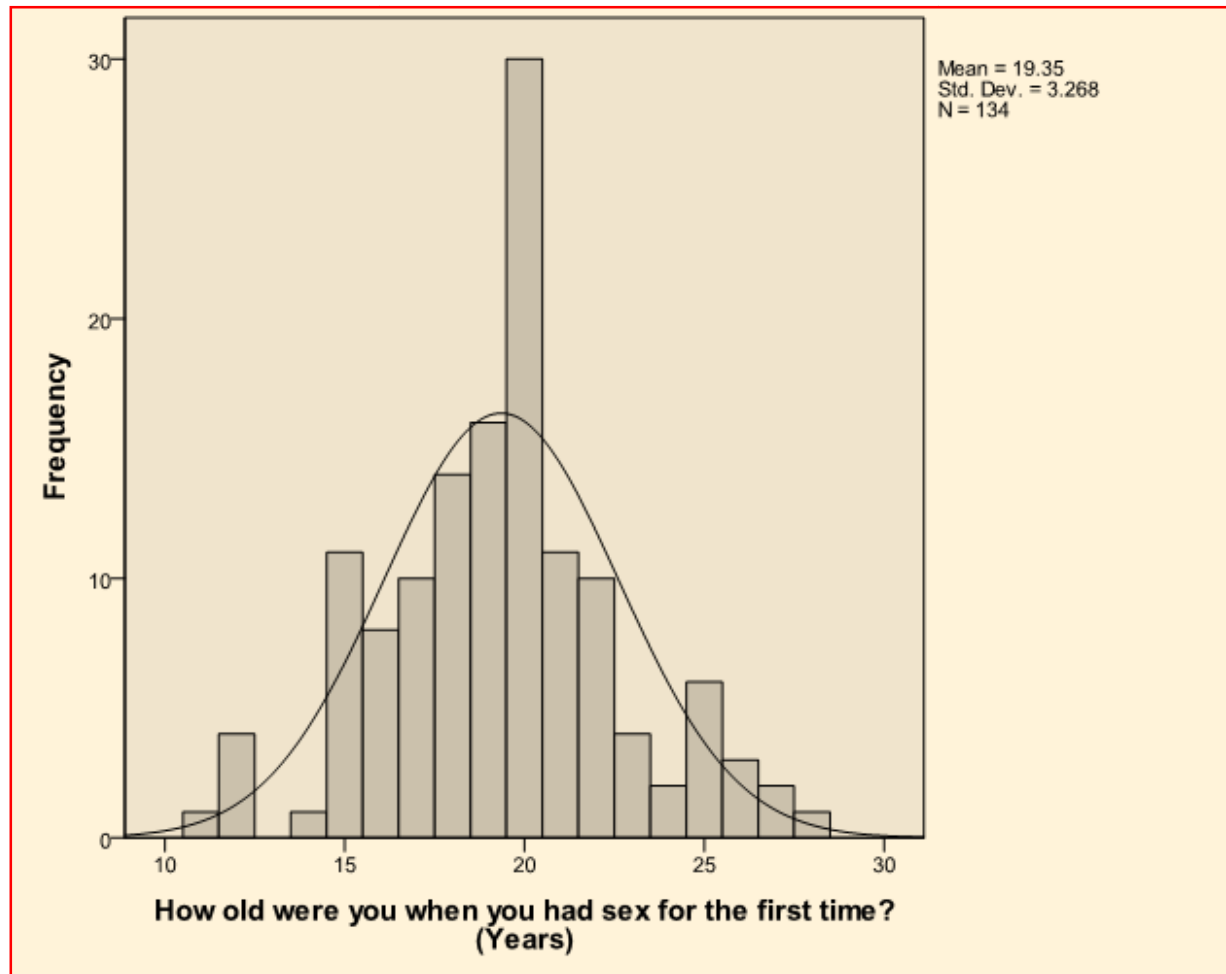
A woman may choose a family planning method because she had discussed it with other. The following table (Table 4.6) shows the methods discussed among women and methods accepted as a result of the discussion.

**Table 4.6 Methods discussed among women and methods accepted as a result of discussion**

<b>Variables</b>		<b>Frequency (n=137)</b>	<b>Percentage</b>
<b>Methods</b>	Pills	94	68.6
	IUD (copper T)	41	29.9
	Injection	104	75.9
	Condom	70	51.1
	Implants	87	63.5
	Fertility awareness method	36	26.3
	Withdrawal	39	28.5
	Female sterilisation	44	32.1
	Male sterilisation	43	31.4
	Emergency contraceptive	20	14.6
	Lactational amenorrhea method	28	20.4
	Standard days method	20	14.6
<b>Have you accepted a family planning method(s)?</b>	Acceptance of method after discussion	108	78.8
<b>Methods accepted</b>	Pills	23	16.8
	IUD (copper T)	8	5.8
	Injection	61	44.5
	Condom	12	8.8
	Implants	18	13.1
	Fertility awareness method	5	3.6
	Withdrawal	6	4.4
	Female sterilisation	3	2.2
	Male sterilisation	4	2.9
	Emergency contraceptive	2	1.5
	Lactational amenorrhea method	4	2.9
	Standard days method	3	2.2

#### 4.2.13 Sex for the first time and reason behind that sex

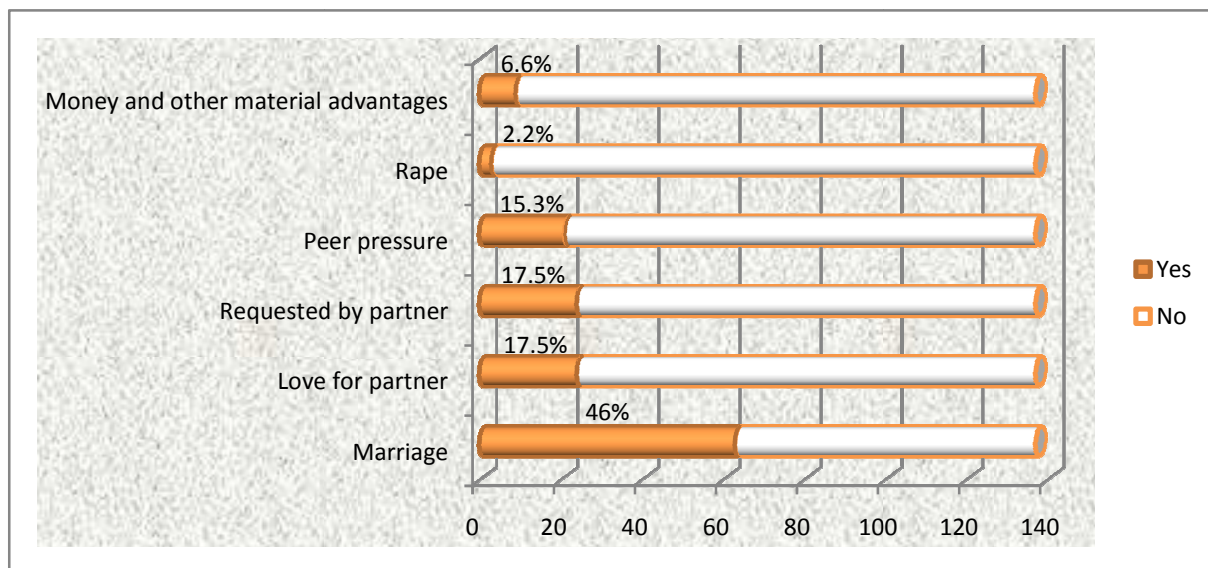
Minimum age for first sex was 11, and the maximum was 28. The mean age of sex initiation in Nyagatare District was 19.



**Figure 4.6: Age when a participant first engaged in sex at Nyagatare District, 2011**

The number of participants who reported to have had their first sexual experience was 134 (n=137). The three missing participants were those who did not have sex. The reasons for having sex for the first time are presented in the figure below (Figure 4.7).





**Figure 4.7 Reason for sex for the first time for women living in Nyagatare District, 2011**

#### **4.2.14 Reproductive information**

Of the participants, 89.8% (n=123) out of 137 had given birth and 25.5% (n=35) of them had experienced the deaths of either their boys or girls. In this study, n=sample of participants and N=population.

**Table 4.7 Child deaths**

<b>Variables</b>	<b>Number</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Boys dead</b>	0	111	81.0
	1	19	13.9
	2	7	5.1
<b>Girls dead</b>	0	119	86.9
	1	14	10.2
	2	3	2.2
	3	1	0.7

The participants in this study comprised pregnant women (11.7%, n=16), women who were not sure whether they were pregnant or not (8%, n=11) and women who were not pregnant (80.3%, n=110).

#### **4.2.15 Abortion information**

Abortion is not allowed in Rwanda. However, in the high- and middle-income countries, this is used as a family planning method. This motivated the researcher to ask the question regarding termination of pregnancy to discover the views of the participants. Table 4.8 presents the perceptions regarding abortion.

**Table 4.8 Termination of pregnancy**

Variables			Frequency	Percentage
Have you heard about termination of pregnancy (abortion)?		Yes	100	73.0
		No	37	27.0
View of abortion	It is a means for fertility regulation	Yes	13	9.5
		No	124	90.5
	It is a violation of child rights	Yes	109	79.6
		No	28	20.4
Place where abortion occurs	Abortion takes place at home	Yes	99	72.3
		No	38	27.7
	Abortion takes place at traditional healer	Yes	78	56.9
		No	59	43.1
	Abortion takes place at clinic	Yes	45	32.8
		No	92	67.2
	Abortion takes place at hospital	Yes	30	21.9
		No	107	78.1
If you could access a termination of pregnancy service, will you use it if you became pregnant unintentionally?		Accepted to use service	17	12.4

In the table above, in the last row, the researcher presents the participants who would make use of the abortion service if the service were made available to them.

#### **4.2.16 Kruskal-Wallis Test and Fisher's Exact Test**

The numerical data was tested for their skewness distribution. The test result is p-value=0.646.

A nonparametric test was used to determine the association between variables. The Kruskal-Wallis Test was used for the association between age and the usage of family planning methods, and showed a p-value of 0.215. In addition, the association of the number of children in a family and the choice of family planning method displayed a p-value of 0.296.

The following table (Table 4.9) shows the results of Fisher's Exact Test.

The interpretation of the statistical significance value is based on the p-value. The significance level is  $p\text{-value} < 0.05$ . For the skewness test, the result was interpreted as symmetrical or normal if the result was equal to zero. The skewness test is significant if the value is above twice the standard error.

**Table 4.9 Test of association between socio-demographic factors and choice of FP methods**

Demographic	P-value
Marital status	0.001
Educational background	0.327
Occupation	0.114
Religion	0.202
Desiring more children	0.095

### **4.3 Conclusion**

This chapter presented the results of study, and the findings were presented in tables and figures. The p-values relating to the test of association were presented.

The following chapter will discuss the findings, including results of the test used, and also the recommendations and the limitations of the study.

## **Chapter five: Discussion, limitations and recommendations**

### **5.1 Introduction**

Chapter five presents the discussion of the findings according to the research framework as well as the research questions. The interpretation of the statistical significance value is based on the p-value. The significance level is  $p\text{-value} < 0.05$ . For the skewness test, the result will be interpreted as symmetrical or normal if the result is equal to zero. The skewness test is significant if the value is above twice the standard error. Finally, the chapter discusses the limitations of the study and the recommendations.

### **5.2 Demographic data**

#### **5.2.1. Age**

The age range of participants was 27 years, the median age was 27 years, quartiles were 25 (23 years), 50 (27years) and 75 (32years). The modes were 23 and 24 (bimodal).

The skewness test showed that the data was skewed, where the skewness p-value was 0.646. The standard error was equal to 0.207. The p-value was above three times the standard error; thus, the p-value explains that the data was not evenly distributed and was positively skewed. The long tails tended to represent the older age group. After finding the data distribution, the researcher decided on the test of association to use. The Kruskal-Wallis Test was chosen because of its use of asymmetric data.

The Kruskal-Wallis Test was used to check the association between age and the use of family planning. It did not reveal any significant association ( $p\text{-value}=0.215$ ).

A study conducted in Ethiopia (Hailemariam and Haddis, 2005) found the factors affecting unmet needs for family planning among the southern nations, nationalities and people of the region. A significant association between age and family planning methods (Hailemariam and Haddis, 2005) was observed where it was less than 0.001 but for the current study, the p-value was equal to 0.215. In another study in the same country (Ethiopia), Dibaba (2009) highlighted

the association between these two elements, where a p-value of less than 0.001 was found. This emphasised that the desire for more children in Ethiopia is related to age, because the p-value revealed the statistical significance value. However, the choice of family planning method in Nyagatare District was not associated with the age of the respondents because the p-value was not statistically significant.

### **5.2.2 Marital status**

Marital status is one demographic factor that could influence the utilisation of family planning services. A high number of married women (85.4%, n=117) used family planning, followed by single women who represented 8.8% (n=12). Divorced women occupied third position with 3.6% (n=5), and widows represented 2.2% (n=3).

In this research, marital status was identified as having a significant association with family planning methods used by women living in Nyagatare District (p-value=0.001). This agrees with the findings in the Ethiopian study (Fantahun, 2006). The research in Ethiopia was conducted among users and non-users of family planning with the intent to assess the factors associated with utilisation of family planning services, and showed the association (p-value <0.0001) between marital status and family planning (Fantahun, 2006).

Moreover, Aryeetey, Kotoh and Hindin (2010) believe that there is an association between marital status and the use of family planning. Their study conducted in Ghana to determine the knowledge, perception and use of modern contraception among women in the Ga East District in that country, showed a significant association.

In many communities, focus on family planning is on married women only with little consideration for single women. Nyagatare District authorities have to focus on married couples as well as single people in order to enhance family planning programmes. This may be explained by the reality of early sex initiation, namely that one may start sex even before 15 years old (Ruland, 2003; Burgard and Lee-Rife, 2009). The attention is needed by younger people as well. This research did not aim at looking at persons under 18 years but the result informed the researcher that minors also need information regarding family planning. To be single does not mean not getting pregnant.

### **5.2.3 Education**

The findings showed that participants who were educated up to the primary level represented 62% (n=85), secondary level = 18.2% (n=25) and uneducated = 19.7% (n=27). There were no participants educated up to tertiary level.

The community of Nyagatare District has access to one university and a high school. There was no participant from these educational institutions in the research study. The data in this research excluded the population of people younger than 18 years; however, the population studying at the above institutions are above that age and it is not known what they use for fertility regulation purposes.

A test to find whether there is association between the level of education and the use of family planning (choice of family planning methods) showed a p-value=0.327, which is not of statistical significance. However, even if there is no significant association, research needs to be done among single people studying at those institutions.

The results from the Ethiopian study were different from the results from this study in that the association between educational background and the use of family planning was of statistical significance in Ethiopia (Fantahun, 2006; Dibaba, 2009). On the other hand, neither Hailemariam and Haddis (2005) nor Aryeetey et al. (2010), in their study in Ghana, found any association between educational background and the use of family planning methods. Educational background can be associated with family planning depending on the society or the place where the research is conducted. The Rwandan population has professors, doctors, masters and bachelor graduates but these categories could not be found in the areas where the research was conducted. A high number of these categories are working in cities. They might attend the public health facilities because the service for family planning is free of charges but in private they pay for family planning services.

#### **5.2.4 Occupation**

Most residents in Rwanda live from substance farming. In Nyagatare, farmers stand at 75.9% (n=104). According to the findings of this study, the other residents are traders (6.6%, n=9), public workers(6.6%, n=9), private workers (2.2%, n=3) and unemployed (5.8%, n=8).

According to the findings of this study, the unemployed in Nyagatare District are people who had completed secondary education and do have not a job. The unemployment rate of women stands at 5.8%, which is not high when compared to the national unemployment rate of 30% in 2008. In the United States, the Bureau of Statistics showed that the unemployment rate is 9.1% (United States, 2011) and in Canada the employment rate is 7.1(Trading Economics, 2011). These data available from United States and Canada are not specific for the women but for the population in general.

The type of occupation does not influence the choice of family planning methods (p-value=0.114) as proved by the test of association. It may influence the results where the choice of family planning might correlate with occupation, but in this study, the p-value is not statistically significant and this shows no evidence of correlation.

#### **5.2.5 Religion**

Christianity used to be the dominant religion in Nyagatare District with 85.4% (n=117); however, since 1993, the number of Christians rose to 90% (Demaerel, 2009) and in 2001it shot up to 93.6% (this is the national estimate) (Demaerel, 2009). Muslims represent 7.3% (n=10) and nationally they represent 4.6%, according to the 2001 data, with traditional indigenous beliefs representing 0.7% (n=1) in the district, nationally presenting 0.1%,and people without any religion representing 6.6% (n=9), nationally representing 1.7% (NationMaster, 2005).

The test regarding the association between religion and family planning did not yield any statistically significant value (p-value=0.202). In Nyagatare District, the choice of family planning methods is not related to religious beliefs. This is interesting as it is believed that that the target of Christian churches as well as that of Muslim congregations could yield a positive attitude toward family planning methods, and associates this target with outreach in the



community to get in touch with those who do not have any religious association. It yielded similar results to the research done by Family Health International (2010) in five districts of Rwanda where there was no evidence that religion was associated with non-use of contraceptives. However, Sills (2011) points out that women do not want or intend to use modern family planning because of their religion. The researcher of the present study believes that specific family planning decisions are influenced by religious beliefs and practices, such as Catholicism, which accepts natural methods but not modern methods and believes that modern methods were made to kill (Srikanthan and Reid 2008). In a similar way, the Islamic faith does not believe in limiting the number children because children belong to God (Melby, 2009). However, the test of association attests that there is no association. Furthermore, research in churches is needed for supporting this finding.

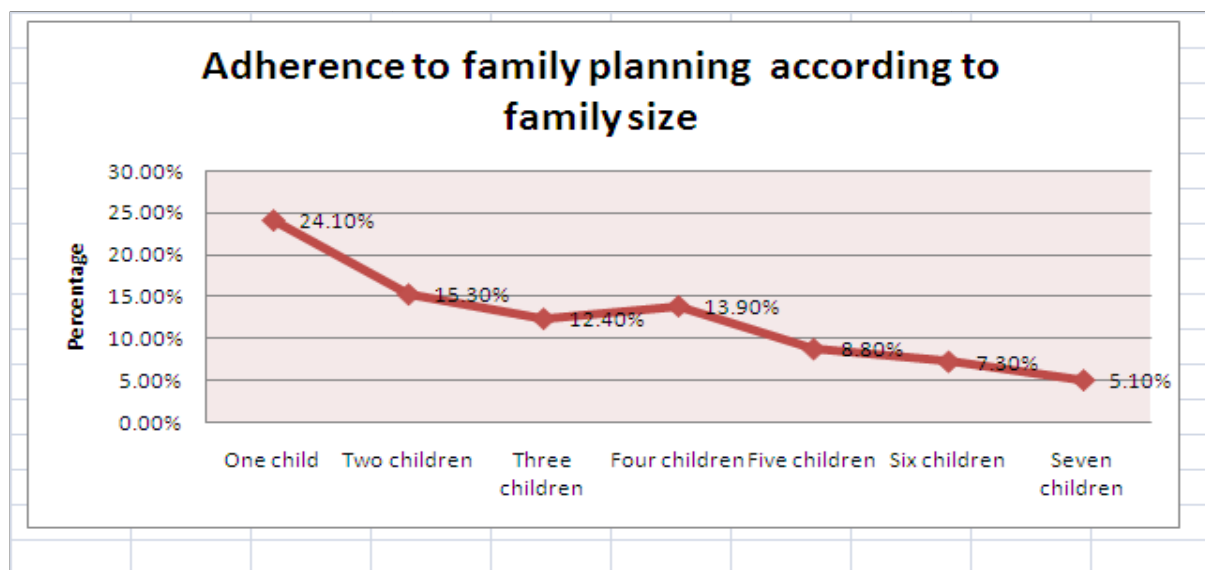
#### **5.2.6 Number of children**

A high number of participants had one child (24.1%, n=33). Participants without children were mostly single and others had experienced the death of a child. In the second place was participants who had two children (15.3%, n=21). The third group comprised participants with four children (13.9%, n=19), the fourth was represented by participants with three children (12.4%, n=17), families with five children (8.8%, n=12), followed by families with six children (7.3%, n=10), and finally those with seven children (5.1%, n=7).

It is remarkable that the use of family planning methods decreased in accordance with increases in the number of children. The exception is seen in the group of participants who had three or four children, where those with four children were more than those with three children. This exception leads to the rejection of the assumption that family planning is adhered to depending on the family size. Moreover, the test of association between the number of children in a family and the use of family planning confirms that there is no association (p-value=0.296).

It was surprising to discover that the women in the study wanted to have more children when they had a third child (12.4% to 13.9%). They also tended to stop after they had given birth to the fourth child (13.9% to 8.8%). The adherence by women living in Nyagatare District to family planning methods according to the size of the family is summarised in Figure 5.1. In a study by

Gizaw and Regassa (2011) in Ethiopia, it was found that the use of family planning is related to the size of family. The test of association revealed the significance values. In another study in Kenya (Okech, Wawire and Mburu, 2011) to determine the utilisation level of family planning services and to analyse the determinants of the demand for family planning services among women in city slums in Kenya, showed that there was no association between the number of children in a family and the use of family planning services. The p-value did not display the significance number.



**Figure 5.1 Adherence to family planning according to family size in 2011**

The number of children could be the factor that influences family planning. Married couples with no children had no need to use the family planning due to their desire for children, in contrast with couples with children, who had to determine the number of children that they are able to feed and educate, and to avoid short birth-bearing spacing.

### **5.3 Perception of family planning**

Out of 137 (100%), 128 (93.4%) knew about family planning and 97.8% (n=134) believed that family planning was important. In response to the different views, family planning was seen as assisting with birth spacing (85.4%, n=117), to have few children (78.1%, n=107), the use of contraception (75.9%, n=104), prevention of pregnancy (64.2%, n=88), injection (56.2%, n=77), the Pill (55.5%, n=76) and condoms (50.4%, n=69).

The attitude of women living in Nyagatare District is positive toward the use of contraceptive methods. According to the participants, family planning is having a child at a time they decided to have that child. This involves the prevention of pregnancy at a time the couple desires to be free of having children. To achieve this wish, strategies have to be in place. The use of contraceptives is, for instance, injections, pills or condoms.

Family planning helps to save money because clinic charges of delivery are costly. Participants who strongly agreed, together with those who agreed added to 89.1% (n=122) of the participants, which confirm that family planning saves money. Furthermore, the perception that a woman becomes pregnant when she is prepared enough was supported by 91.3% (n=125) of women living in Nyagatare District. The preparation of a woman to have another child includes issues on women's physical and physiological (WHO, 2008a) conditions.

With family planning, one can limit the number of children that you are able to take care of (nutrition, education). Of the participants, 86.9% (n=119) agreed to this. Participants confirmed that women's ability to choose the number and spacing of pregnancies plays a significant role in their general health and wellbeing 85.4% (n=117). They also deem family planning as key to good reproductive health 81.1% (n=111). They see good reproductive health as related to reproductive decision-making, in other words a woman's ability to make a fully informed choice about her reproductive life, to receive information and to have access to family planning methods and services. This insight is shared by others. Whithers, Tavrow and Adinata (2011) said that women's ability to meet their fertility intentions is the basis of reproductive health and rights.

The school curriculum should cover education on sexual health and related issues and a myriad of risk factors, which affect reproductive health. Bad choices are the result of an inadequate level of education/awareness and hindered access to information on sexual and reproductive health and rights. Of the participants in this study, 73.7% (n=101) had the same outlook.

#### **5.4 Source of information**

Information on family planning can come from various sources. It can be from a hospital, clinic or health centre, radio, television, friends, family members, spouse, government doctor, private doctor, nurse, community health worker, or traditional birth attendant.

In Nyagatare District, those resources exist but in different proportions. The common one is the health centre (88.3%, n=121), followed by radio (73.7%, n=101). A nurse as source of family planning information provided it to 67.2% (n=92) of the participants, a community health worker provided a significant amount of information about family planning (64.2%, n=88), and the spouse/husband/partner provided information to 50.4% (n=69).

Among the healthcare personnel, nurses contributed more than physicians to provide information on family planning, namely to 67.2% and 40.1% respectively.

An important source that cannot be left behind is the traditional birth attendant who contributed information to 7.3% (n=10) of participants. This emphasises the need to integrate traditional birth attendants in the healthcare system.

However the information given to the client in response to the demand of the client was 18.2% (n=25), while others received information by the will of healthcare providers. Adamchak, Janowitz, Liku, Munyambanza, Grey and Keyes (2010) found that in Rwanda, the client discusses with the healthcare provider the methods of family planning including the use of condoms. The condom was the most important method as reported by women in Kenya, Ethiopia, South Africa and Uganda.

Of the participants who were using family planning methods in Nyagatare District 69.3% (n=95) received the information from a health centre. Beside this source of information among the users of family planning methods in Nyagatare District, there was the radio that represented 35% (n=48). Qazi, Hashmi, Raza, Soomro and Ghauri (2010) found in Pakistan that the radio played an important role in promoting the use of family planning (76.4%). Another study conducted in India (Kumar, Pramod, Roli, Neeraj and Manoj, 2011) showed the statistically significant value for adopting family planning methods among participants who were exposed to the media. The research further aimed to determine the percentage of unmet needs of family planning in Gwalio District and to study the co-relative factors responsible for unmet needs for family planning. For this study, it was thus confirmed that health centres and radio are the main source of information in Nyagatare District. Moreover, the nurses provide information more often than physicians.

A community can propagate information through discussions with others about health issues. In Nyagatare District, women discuss family planning issues among themselves. The methods which were foremost in their discussion were the injection (75.9%), followed by pills (68.6%) and, much to the surprise of the researcher, implants were third on the list with 63.5%. Even though implants were part of the discussion, none of the participants had ever used them. The implants were appearing in the methods used in Nyagatare because the women liked to talk about that method. The condom as topic of discussion came fourth with 51.1%. Other methods discussed were female sterilisation (32.1%), male sterilisation (31.4%), IUD (29.9%), withdrawal (28.5%), fertility awareness method (26.3%), lactational amenorrhea method (20.4%), and emergency contraceptives as well as standard days method at 14.6% each.

The acceptance of using family planning methods resulted from the discussion at 78.8%. The methods accepted and used by women were injection (44.5%), pills (16.8%), implants (13.1%), condom (8.8%), IUD (5.8%), withdrawal (4.4%), fertility awareness method (3.6%), male sterilisation (2.9%), lactational amenorrhea method (2.9%), female sterilisation (2.2%), standard days method (2.2%) and emergency contraceptives (1.5%). People choose contraceptive methods that are popularly used in their community because they know that it is communally acceptable to do so, and they tend to know more about these methods (David, 2008).

The first four choices of methods corresponded with the first four methods discussed (injection, pills, implants and condom). Female and male sterilisation was discussed more than IUD, withdrawal and fertility as a topic of acceptance. The emergency contraceptive was less discussed and less used.

### **5.5 Family planning methods**

In the next paragraph the family planning methods are discussed namely family planning method in use, failure of method, family planning methods that are not used, quit period of using family planning method, the reason(s) for pregnancy while using a family planning method and reason(s) for not using family planning.

### **5.5.1 Family planning methods in use**

The participants in this study used various methods for fertility regulation purposes (see Figure 4.3). The method most often used in Nyagatare District was the injection (61.8%, n=68). This method is popular as a birth control method worldwide (Roy, 2010). Research conducted in Kenya, Rwanda, Ethiopia, Uganda and South Africa by Adamchak et al. (2010) showed that intramuscular contraceptives were the most used method of contraception in Rwanda, South Africa and Ethiopia. In Kenya and Uganda it was found that the condom was the most preferred (Adamchak et al. 2010) method. Following intramuscular contraceptives, the participants of this study then chose the diaphragm (15.4% (n=17), followed by the condom (8.2%, n=9), then withdrawal (4.5%, n=5) as their preferred contraception methods. The other methods that was mentioned, were oral contraceptives (the Pill) (2.7%, n=3), lactational amenorrhea (1.8%, n=2), periodic abstinence (1.8%, n=2), IUD (1.8%, n=2), outercourse (0.9%, n=1) and female and male sterilisation (0.9%, n=1).

The popular methods discussed and accepted by participants as a result of their discussions were injections, pills, implants and condoms. However, in practice, the first four utilised were injection, diaphragm, condoms and the withdrawal method. The injection was discussed more often as the best option and an accepted method of contraception in Nyagatare District.

There was no correlation regarding the choice of family planning methods as a result of discussion and the practice. It seems that some methods are not available at the healthcare centres. This can be a barrier to the use of a specific family planning method. I wonder whether the participants' knowledge about the topic influenced their attitude to agree to or refuse participation.

The choices of the participants is different from the package the services are offering the users. Some of the methods were not available to the client. The participants who did not use family planning were shown as missing data (n=27), and this included singles who came for advice on family planning and others who were pregnant during data collection.

### **5.5.2 Failure of method**

The failure rate of the methods is shown in Figure 4.5. The injection was rated high at 55.2% of failures. This method is the first option used in this area (61.8%). Research by Trussell (2011) in the United States of America showed that failure can be ascribed to wrong utilisation of intramuscular contraceptives (failure to return on time for the injection). In Nyagatare District, more research is needed to find reasons for failure of the injection method. Pills occupy second place in the failure methods with 27.6%. This failure may be caused by users' perception of pills. When one talks to the people, it is clear that there is a myth that pills cause infertility (Jones, 2008). Condom and fertility awareness methods have the same percentage (6.9%) of failure. The last one is withdrawal at 3.4% of failure.

Of the women who were using some kind of family planning method, 21.2% discovered that they were pregnant while using the method. Information about family planning methods in a community is important as it might help to lessen the failure rate.

### **5.5.3 Family planning methods that are not used**

Methods that are not used are emergency contraceptives and implants.

A community has to be taught and informed about these methods because these methods are vital to the wellbeing of women as well as the development of a country. Emergency contraceptives protect against unwanted pregnancies (60–90%) when used within five days after having unprotected sex (WHO, 2011). Research by Langston (2010) showed that emergency contraceptives can prevent 60–94% of unwanted pregnancies. Healthcare providers have to give information at reproductive healthcare clinics, so that the population may know about it. Emergency contraceptives are reserved as a last resort for women who want to prevent pregnancy after unprotected sex (Fine, 2010). Emergency contraceptives are vital because unprotected intercourse occurs worldwide (Trussell and Raymond, 2011).

Implants are important not merely to the client but they also reduce the time spent visiting the healthcare institution. They last for three to five years and they also reduce the frequency of meetings between health workers and clients. Rwanda is faced with an acute shortage of nurses

(healthcare workers). Implants could therefore be the best option as they save time. Besides that, clients' frequency of visits to the healthcare institution will be reduced. Moreover, a woman with implants does not have to do anything before sex to avoid or prevent pregnancy (Maxwell, Belser and David, 2007).

#### **5.5.4 Quit period of using family planning method**

The period to quit any kind of family planning method in Nyagatare District varies from one month to 24 months. The results from the current research show that women tend to quit after three months (22.7%) (See Figure 4.4), or during the 6<sup>th</sup> month and the 24<sup>th</sup> month, which occupy second position with 18.2% each. Others months are the first month of initiation to a family planning method, the 4<sup>th</sup>, 9<sup>th</sup> and 12<sup>th</sup> months. Those months have a drop-out rate of 9.1%, while the second month of initiation has a drop-out rate of 4.5%. The desire to continue with any kind of family planning comes after the third month of initiation.

Quitting a family planning method during the 24<sup>th</sup> month should not be the problem if the reason is to have a child. The normal birth spacing period is two years as recommended by the World Health Organisation (Mathe, 2011). Mathe recommends six months before another pregnancy after having an abortion or a miscarriage.

#### **5.5.5 The reason(s) for pregnancy while using a family planning method**

Every family planning method has a degree of failure; therefore, it can result in a pregnancy. However, there are factors that could enhance the possibility of an unplanned pregnancy when using a family planning method. In the current study, forgetting to use a method was the main reason for an unintended pregnancy (73.0%), followed by forgetting doctors' appointments for continuation of the method (66.4%). Other reasons included a broken condom (48.2%) and unavailability of the method at the health facility (31.4%). The community health worker could help women to avoid some of these factors by reminding them to use the methods constantly.



### **5.5.6 Reason(s) for not using family planning**

In Nigeria, the main reasons for not using family planning are fear of side-effects and the husband's disapproval (Olugbanga-Bello, Abodunrin and Adeomi, 2011). In Nyagatare District, the reasons for not using family planning were that some people are not aware of family planning methods (48.2%), the desire for a male child (47.4%), fear of side-effects (39.4%), prohibition by religion (38.7%), the desire for a female child (38.7%), husband dislikes it (36.5%), belief that it reduces coital satisfaction (35.0%) and fear of killing children (19.0%). Of the participants, 9.5% suffered from side-effects. The study did not establish the kind of side-effects from which participants suffered but only aimed to find the factors influencing family planning. The fear of side-effects could be the reason why there are few clients using family planning services.

A male child is more desirable than a female child in Nyagatare District as shown by the reasons for not using family planning as 47.4% and 38.7% respectively. In Sudan, the main reasons for not using family planning were that people want many children and fear of side-effects (Ali et al., 2011). However, in Nyagatare, the main reason was that the people were not aware of family planning methods. Education is required in order to enhance the level of understanding regarding family planning methods.

### **5.5.7 Sex for the first time and its reasons**

Sex initiation is a factor that could predict the high or low fertility in a region. According to the current research findings, age at sex initiation in Nyagatare District was 19 years old, with variations; however, the minimum age of sex was 11 years and the maximum age, 28 years. A high proportion of participants in this study had sex for the first time because of marriage (46%). Some of the women had sex because of their love for their partners and others had sex when requested by partners (17.5% in each case). Those who succumbed to requests for sex because of peer pressure stood at 15.3% of the participants, money and other material benefits pushed some to engage in sex (6.6%), and the last reason was rape (2.2%). Literature points to the age of sex initiation in South Africa as 10 years old, while fewer than 10% experienced sex before their 15<sup>th</sup> birthday (Manzini, 2001; Burgard and Lee-Rife, 2009). In Jamaica, sex initiation for a girl occurs at 15.2 years (Hardee, 2002). During the war in Rwanda, there was the problem of rape, which

could cause early sex at 11 years. In addition, one person stated sex at the age of 28 is due to cultural influences. Rwandan people have a culture which advises people to abstain from sex until marriage.

The researcher believes that the vulnerable groups who have sex for the first time because of money and other material benefits are usually orphans and those from poor families where young girls can sell their bodies in order to meet their needs when parents are unable to do so. Family planning can solve the problem by providing the means for having children that a family can take care of. More research is needed to find out the reason(s) behind these young women having sex for the money and other material benefits.

Rape is also problematic, as 2.2% of women are raped in Nyagatare District according to the findings of this study (Figure 4.7). The Rwandan government has to put in place strategies to protect women from being sexually violated. Rape has many disadvantages. It affects the psychology of the raped person, and it can also end up in unintended pregnancies or sexually transmitted infections, including HIV/AIDS. This study did not look the reason for the real situation because it was descriptive by nature but the rapes were probably due to the war, which occurred in 1990–1994.

Education on family planning among the young is required to prevent unintended pregnancies that could be associated with sex as a result of peer pressure. The service responsible for distributing condoms must make condoms available to the young people so that if they are engaging in sex, they may be protected against HIV/AIDS as well as unintended pregnancies.

## **5.6 Reproductive information**

Reproductive information encompasses births and deaths. In the demographic data discussed above, we mentioned births by family. In the current sub-section, we are going to look at information regarding deaths of children to complete the previous section. The research was conducted among participants who had given birth (89.8%) and 25.5% of the participants had already experienced the death of a child. Families with one dead child = 13.9% (n=19) for boys and 10.2% (n=14) for girls, two children dead = 5.1% (n=7) for boys and 2.2% (n=3) for girls, three children = 0.7% (n=1) for girls, no family had three boys who had died. A total of 56

children had died and 371 children were still alive (see paragraph 4.2.14). Among the deaths, there were 33 boys and 23 girls. There are a higher number of deaths among boys than among girls. The ratio between deaths and live children highlights the following information:

Ratio (deaths to live children) =  $\frac{56}{371} \Leftrightarrow$  Ratio (deaths to alive) =  $0.151 = \frac{151}{1\,000}$ . The calculation of this ratio may be found in Joubert and Ehrlich (2007:21). This number gives the status of child mortality in Nyagatare. The death ratio in Nyagatare District is 151/1 000. This means that of 1 000 births in Nyagatare District we can expect to have 151 deaths.

Child mortality is a determinant of the overall health status of a community. The death of a newborn as well as maternal death can be prevented if all women have access to family planning as stated in UNFPA (2009).

Of the women who participated in the present research, 11.7% (n=16) were pregnant. These women came to the antenatal clinic for the follow-up of their kids.

## **5.7 Abortion information**

Information on abortion is included in the analysis because it is considered to be one type of family planning method in some countries (Bristow, 2010) while others view it differently (Nambi, 2009; Ndikubwayezu, 2009). Perceptions on abortion have to be taken into account so that researchers and policy-makers can come up with strategies to educate and inform communities. When done in the backstreets, abortion takes the lives of women. Abortion in Nyagatare District was known by 73.0% of the participants and was seen as a means of fertility regulation by 27.0% of the participants. However, none were using it. Others saw abortion in light of violation of children's rights (79.6%). However, in high-income countries, including South Africa, abortion is seen as a family planning method. In Rwanda, abortion is legally prohibited (Nambi, 2009; Ndikubwayezu, 2009).

The research participants reported that abortion usually takes place at home (72.3%), on the traditional healer's premises (56.9%), at the clinic (32.8%) and in a hospital (21.9%). The foremost place to have an abortion, as reported by the participants, was at home. Some reported that when an individual embarks on an abortion process, she leaves the house and goes into the

bush so that nobody will know what happened. In Rwanda, no clinic or hospital is permitted to perform an abortion unless there is an abnormality to the foetus or when the life of the mother is endangered. For instance, when the life of woman is endangered by a present pregnancy or when the foetus has an abnormality that could not allow the baby to survive an abortion can be legally conducted. However, at home and in the case of bush abortions (back street abortions in SA) there is no medical indication for such abortion. Unfortunately, due to poor standards and care in these illegal practices, the woman is exposed to complications. In Rwanda, it is prohibited for traditional healers to perform an abortion (Mutesi, 2011).

However, even although abortion is prohibited, 12.4% of participants wished for the service to be available should they unintentionally become pregnant. The utility of family planning is to avoid unintended pregnancies by using correct and consistent chosen methods.

## **5.8 Recommendations**

These recommendations are directed at the Minister of Health in Rwanda, local authorities in Nyagatare District and at nurse researchers, nurse practitioners as well as educators.

### **Minister of Health**

- community health workers should be trained regarding family planning in order to help the people with enough information. In Rwanda, the majority of community health workers are not educated even in the primary schools.
- traditional medicine should be integrated into the healthcare system in all healthcare settings should be promoted so that people who use traditional birth attendants have more information on family planning;
- family planning programmes should be incorporated into primary and secondary schools' curriculum so that young people will know how to behave when the situation arises; and
- nurses and physicians should be encouraged to provide family planning information during reproductive health consultations.

### **Local authorities**

- should enhance the programme that helps vulnerable people (orphans or the poor) who could be driven to have sex for money or other material benefits; and

- According to the results, rape is still a problem in the district of Nyagatare and the local authorities should intensify their programmes for protecting women and children against violence

### **Further research**

- more research is needed to find the major causes of injection failure in Nyagatare District;
- qualitative research among women living in Nyagatare District (household) regarding family planning is required to strengthen the findings of this study, where the women will express themselves;
- knowledge about male perceptions on family planning and recommendations regarding their input are needed because a family is made up of a wife, husband and children;
- research at universities and high schools is necessary to determine how these institutions are dealing with fertility regulation; and
- research in churches could give more insight into how churches approach and deal with family planning.

As the findings indicated, there are methods which are discussed in the community and people make choices. More research is needed to find out the perceptions of healthcare personnel towards community perceptions.

### **Education**

- should teach family planning in the schools, in conferences and at meetings;
- should provide family planning lessons with the results of the current research;
- should provide education regarding family planning, which should start in primary schools so that young people will know how to behave when the situation arises; and
- should provide education regarding family planning among the youth to prevent unintended pregnancies that could be associated with peer pressure sex.

## **Practice**

- awareness programmes within the community regarding family planning should be increased so that the utilisation of the services can be improved and increased and
- all methods of family planning should be available at the health facility.

## **5.9 Limitations of the study**

This sub-title is going to present the limitations encountered during this study:

- The study was focused on the residents and not on the function of healthcare settings. Health facilities may be willing to offer better services to clients but the equipment may be lacking there. Another problem may be that there is no qualified person to offer proper family planning services.
- The study used women who visit health centres as the population of the study. In the area known that the family planning is low, it means that the people who visit the health facility for family planning are not many. The household survey may be the better one.
- The researcher used five health centres out of 18 health centres. The rest of the health centres could be different from the health centres used in the research.
- The findings represent only one district and not the whole of Rwanda.
- Time for data collection was limited. The time for receiving the ethical approval as well as permissions takes a long time. That affected the plan proposed by the researcher.
- The language used in this document is not the researcher's first language. The formulation and grammar of English therefore caused problems for the researcher.
- The researcher did not know any accredited editor. The first selected was not accredited and that caused problems for the readers of my dissertation. A second editor had to be contracted, which also consumed precious time.

## **5.10 Conclusion**

This chapter summarised the findings and the objectives of the study: family planning methods used by women living in Nyagatare District as well as their perception of family planning, sources of information, family planning methods that are not used by the participants, the association between demographic factors and family planning methods in use. The chapter ended with a summary of the limitations of the study and recommendations.

## References

- ABBOTT, P. & RWIRAHIRA, J. 2010. *Millennium Development Goals: Rwanda Country Report 2010*. Kigali: UNDP.
- ACHARYA, D.R., BHATTARIA, R., POOBALAN, A.S., VAN TEIJLINGEN, E. & CHAPMAN, G.N. 2010. Factors associated with teenage pregnancy in South Asia: A systematic review. *Health Science Journal*, 4(1):3–14.
- ADAMCHAK, S., JANOWITZ, B., LIKU, J., MUNYAMBANZA, E., GREY, T. & KEYES, E. 2010. Study of family planning and HIV integrated service in five countries. *Family Health International*. Final report. USA.
- ALADE, A.F. 2010. Correlate of family planning among married people in Lagos State. *Medwell Journals*, 5(4):376–379.
- ALASUUTARI, P., BICKMAN, L. & BRANNEN, J. (Eds.). 2008. *Social research methods*. London: Sage.
- ALEXANDER, L.M. 2010. Primary care workforce needs in Rwanda. *Journal of Physician Assistant Education*, 21(1):45–48.
- ALI, A.A.A., RAYIS, D.A., MAMOUN, M. & ADAM, I. 2011. Use of family planning methods in Kassala, Eastern Sudan. *BMC Research Notes*, 4(1):43–45.
- ANDERSON, K.G., BEUTEL, A.M. & MAUGHAN-BROWN, B. 2007. HIV risk perceptions and first sexual intercourse among youth in Cape Town, South Africa. *International Family Planning Perspectives*, 33(3):98–105.
- ARBAB, A.A., BENER, A. & ABDULMALIK, M. 2011. Prevalence, awareness and determinants of contraceptive use in Qatari women. *Eastern Mediterranean Health Journal*, 17(1):11–18.



- ARYEETEY, R., KOTOH, A.M. & HINDIN, M.J. 2010. Knowledge, perception and Ever use of modern contraception among women in the Ga East District, Ghana. *African Journal of Reproductive Health*, 14(4):27–32.
- BASINGA, P., MOORE, A., SINGH, S., AUDAM, S., CARLIN, L., BIRUNGI, F. & NGABO, F. (N.d.). *Abortion incidence in Rwanda*. Available from: <http://paa2011.princeton.edu/download.aspx?submissionId=110387> [29 April 2011].
- BERRY, L. & HALL, K. 2009. Teenage pregnancy. *HIV & AIDS and STI National Strategic Plan 2007–2011, South Africa*. University of Cape Town.
- BESSINGER, R., AKWARA, P. & HELPERIN, D. 2003. *Sexual behavior, HIV, and fertility trends: A comparative analysis of six countries. Phase I of the ABC Study*. Washington, DC: Measure Evaluation/USAID.
- BISIKA, T. 2008. Cultural factors that affect sexual and reproductive health in Malawi. *Journal of Family Planning and Reproductive Health Care*, 34(2):79-80.
- BLAIR, C., SINAI, I., MUKABATSINDA, M. & MURAMUTSA, F. 2007. Introducing the standard days method: Expanding family planning options in Rwanda. *African Journal of Reproductive Health*, 11(2):60–68.
- BRACHE, V., FAUNDES, A., ALVAREZ, F. & GARCÍA, A.G. 2006. Transition from Norplant to Jadelle in a clinic with extensive experience providing contraceptive implants. *Contraception*, 73(4):364–367.
- BRINK, H. 2006. *Fundamentals of research methodology for healthcare professionals*. Second edition. Cape Town: Juta.
- BRISTOW, J. 2010. Abortion provision: Building on the gain. *Abortion Review*, 33:1-8.
- BRYANT, L., CARVER, L., BUTLER, C.D. & ANAGE, A. 2009. Climate change and family planning: Least-developed countries define the agenda. *Bulletin of the World Health Organization*, 87(11):852–857.

- BRYCE, J., BLACK, R.E., WALKER, N., BHUTTA, Z.A., LAWN, J.E. & STEKETEE, R.W. 2005. Can the world afford to save the lives of 6 million children each year? *Lancet*,365(9478):2193–2200.
- BURGARD, S.A. & LEE-RIFE, S.M. 2009. Community characteristics, sexual initiation, and condom use among young black South Africans. *Journal of Health and Social Behaviour*,50(3):293–309.
- BURNS, N. & GROVE, S.K. 2005. *The practice of nursing research: Conduct, critique, and utilization*. Fifth edition. St Louis: Elsevier: Saunders.
- BURNS, N. & GROVE, S.K. 2007. *The practice of nursing research: Conduct, critiques and utilization*. Fifth edition. St Louis, MO: Elsevier Saunders.
- CAPE GATEWAY. 2006. *Contraception, family planning*. Available from: <http://www.capegateway.gov.za/eng/directories/services/11517/6473> [7 April 2011].
- CASEY, S.E., MITCHELL, K.T., AMISI, I.M., HALIZA, M.M., AVELEDI, B., KALENGA, P. & AUSTIN, J. 2009. Use of facility assessment data to improve reproductive health service delivery in the Democratic Republic of the Congo. *Conflict and Health*,3:1–12.
- CATES, W. 2010. Family planning: The essential link to achieving all eight Millennium Development Goals. *Contraception*,81(6):460–461.
- CHAMPION, V.L. & SKINNER, C.S. 2008. The health belief model. In Glanz, K. & Rimer, B.K. & Viswanath, K. (Eds). *Health Behaviour and Health Education: Theory, Research, and Practice*,4<sup>th</sup> Edition 45-65. San Francisco: Jossey-Bass.
- CHANDRASEKHAR, S., GEBRESELASSIE, T. & JAYARAMAN, A. 2007. Marriage, fertility and health care seeking behavior in Rwanda. *Population Research and Policy Review*, 30(1):25–41.
- CHAPMAN, E. 2011. Family planning versus population control in Mexico. *TuftsScope:The Interdisciplinary Journal of Health, Ethics, and Policy*, 10(2):2–42.

- CLELAND, J., BERNSTEIN, S., EZEH, A., FAUNDES, A., GLASIER, A. & INNIS, J. 2006. Sexual and reproductive health 3. Family planning: The unfinished agenda. *Lancet*, 368(9549):1810–1827.
- CONSIDINE, J., BOTTI, M. & THOMAS, S. 2005. Design, format, validity and reliability of multiple choice questions for use in nursing research and education. *Collegian*, 12(1):19–24.
- DANIEL, E.E., MASILAMANI, R. & RAHMAN, M. 2008. The effect of community-based reproductive health communication interventions on contraceptive use among young married couples in Bihar, India. *International Family Planning Perspectives*, 34(4):189–197.
- DAVID, O. 2008. Socio-cultural and norms factors influencing family planning choices among couples in Ibadan Metropolis, Nigeria. *European Journal of Scientific Research*, 23(2):211–218.
- DCDP (DEVELOPMENT COMMUNITY AND DECENTRALIZATION PROJEC / MINISTÈRE DE L'ADMINISTRATION LOCALE, DE LA BONNE GOUVERNANCE, DU DÉVELOPPEMENT COMMUNAUTAIRE ET DES AFFAIRES SOCIALES). 2007. *Nyagatare District Development Plan 2008–2012*. Nyagatare.
- DEMAEREL, I. 2009. *Pray4Belgium: Rwanda-Belgium*. Report delivered at the Belgium-Rwanda reconciliation conference, Kigali-Gitarama, 7–14 July.
- DEPARTMENT FOR INTERNATIONAL DEVELOPMENT. 2010. *Improving reproductive, maternal and newborn health: Reducing unintended pregnancies*. Geneva.
- DO, W.D.R. 2009. The RAPID Model. *Health Policy*, Available from <http://www.healthpolicyinitiative.com/index.cfm?id=software&get=Spectrum> [19 February 2011].
- DOH (DEPARTMENT OF HEALTH). 2001. *South Africa national contraception policy guideline*. Pretoria: National Department of Health

- DOH (DEPARTMENT OF HEALTH). 2006. *Preliminary report on the 2003 Demographic and Health Survey*. Pretoria: National Department of Health.
- DOH (DEPARTMENT OF HEALTH). 2009. *South African National HIV Prevalence, Incidence, Behaviour and Communication Survey, 2008: A turning tide among teenagers?* Cape Town: HSRC Press.
- DONAHOE, D. 1996. *Men and family planning in Bangladesh: A review of the literature*. Final report. Bangladesh: The population Council.
- DORENBOS, P.B. & VAN VUUREN, A. 2003. *Abolition of abortion*. Hilversum, Holland: Cry for Life International.
- ELUL, B., DELVAUX, T., MUNYANA, E., LAHUERTA, M., HOROWITZ, D., NDAGIJE, F., ROBERFROID, D., MUGISHA, V., NASH, D. & ASIIMWE, A. 2009. Pregnancy desires, and contraceptive knowledge and use among prevention of mother-to-child transmission clients in Rwanda. *AIDS*,23:S1-S19.
- FAMILY HEALTH INTERNATIONAL. 2010. *Expanding contraceptives use in Rwanda*. Rwanda.
- FANTAHUN, M. 2006. Comparative study of the characteristics of family planning service users and non-users in northwest Ethiopia. *Africa Journal of Reproductive Health*, 10(1):62–70.
- FINE, P.M. 2010. Update on emergency contraception. *Advances in Therapy*,28(2):87–90.
- FORD, N., MILLS, E.J., ZACHARIAH, R. & UPSHUR, R. 2009. Ethics for conducting research in conflict settings. *Conflicts and Health*,3(7):1–9.
- FREEMAN, S. & SHULMAN, L.P. 2010. Considerations for the use of progestin-only contraceptives. *Journal of the American Academy of Nurse Practitioners*,22(2):81–91.

- FROST, J.J. & DARROCH, J.E. 2008. Factors associated with contraceptive choice and inconsistent method use, United States, 2004. *Perspectives on Sexual and Reproductive Health*, 40(2):94–104.
- GERHARDT, L.P. 2004. *Research methodology explained for everyday people*. [http://dc435.4shared.com/doc/AT\\_yhLqd/preview.html](http://dc435.4shared.com/doc/AT_yhLqd/preview.html) [11 April 2011].
- GILBERT, N. 2008. *Researching social life*. Third edition. Guildford: Sage.
- GIZAW, A. & REGASSA, N. 2011. Family planning utilization in Mojo Town, Ethiopia: A population based study. *Journal of Geography and Regional Planning*, 4(6):355–363.
- GLANZ, K., RIMER, B.K. & LEWIS, F.M. 2002. *Health behavior and health education: Theory, research and practice*. San Francisco, CA: Wiley.
- GLASIER, A. 2010. Acceptability of contraception for men: A review. *Contraception*, 82(5):453–456.
- GOLAFSHANI, N. 2003. Understanding validity and reliability in qualitative research. *The Qualitative Report*, 8(4):597–607.
- GREENE, M.E. & MERRICK, T. 2005. *Poverty reduction: Does reproductive health matter?* Health, Nutrition and Population discussion paper. Washington, DC: World Bank.
- GRIGGS, C. 2009. *As family planning goes global, Haiti becomes a case in point*. Available from: <http://www.thecuttingedgenews.com/index.php?article=11553&pageid=&pagename> [26 May 2011].
- HABIMANA, D. 2010. *World Population Week, Everyone counts*. United Nations Population Fund, Rwanda. Available from: [http://rwanda.unfpa.org/drive/RwandaWorldPopulationdayReport2010\(LR\).pdf](http://rwanda.unfpa.org/drive/RwandaWorldPopulationdayReport2010(LR).pdf) [03 October 2011].

- HAILEMARIAM, A. & HADDIS, F. 2005. Factors affecting unmet need for family planning in southern nations, nationalities and peoples region, Ethiopia. *Ethiopian Journal of Health Sciences*, 21(2):77–89.
- HARALAMBOS, M. & HOLBORN, M. 2000. *Sociology: Themes and perspectives*. Hammersmith: HarperCollins.
- HARDEE, K. 2002. Youth.now.Jamaica USAID Bilateral Adolescent Reproductive Health Project (2000–2004). *Global Health Council Congressional briefing: Securing the future for adolescent and youth*. Washington, DC.
- HARROWING, J.N., MILL, J., SPIERS, J., KULIG, J. & KIPP, W. 2010. Culture, context and community: Ethical consideration for global nursing research. *International Nursing Review*, 57:70–77.
- HATCHER, R.A., TRUSSELL, J. & NELSON, A.L. 2008. Contraceptive technology. *PDR Network*. Ardent Media, New York.
- HICKEY, M. & D'ARCANGUES, C. 2002. Vaginal bleeding disturbances and implantable contraceptives. *Contraception*, 65(1):75–84.
- HIRSCH, J.S. 2008. Catholics using contraceptives: Religion, family planning, and interpretive agency in rural Mexico. *Studies in Family Planning*, 39(2):93–104.
- HORNER, J.R., SALAZAR, L.F., ROMER, D., VANABLE, P.A., DICLEMENTE, R., CAREY, M.P., VALOIS, R.F., STANTON, B.F. & BROWN, L.K. 2009. Withdrawal (coitus interruptus) as a sexual risk reduction strategy: Perspectives from African-American adolescents. *Archives of Sexual Behavior*, 38(5):779–787.
- HUBER, B.D., MARTIN, R., WILSON, A., HARRIS, N., NESBITT, R. & FRASER, M. 2010. *Family planning methods: How do they work and why does it matter?* Christian Connections for International Health ([www.ccih.org](http://www.ccih.org)). Family Planning/Reproductive Health Working Group. Institute for Reproductive Health. Georgetown University

- HUMAN RIGHTS. N.d. *Abortion and human right: Declaration of right of the child*. Available from: <http://www.qrtl.org.au/humanrights.htm> [9 May 2011].
- HUSSAINY, S.Y., STEWART, K., CHAPMAN, C.B., TAFT, A.J., AMIR, L.H., HOBBS, M.K., SHELLEY, J.M. & SMITH, A.M. 2010. Provision of the emergency contraceptive pill without prescription: Attitudes and practices of pharmacists in Australia. *Journal of Contraception*, 83:159–166.
- IBNOUF, A.H., VAN DEN BORNE, H.W. & MAARSE, J.A.M. 2007. Utilization of family planning services by married Sudanese women of reproductive age. *Eastern Mediterranean Health Journal*, 13(6):1372–1381.
- INDEX MUNDI. 2011. *Demographic population: Rwanda*. Available from: <http://www.indexmundi.com/g/g.aspx?v=21&c=rw&l=en> [22 November 2011].
- JACKSON, K.B. 2005. Lactational amenorrhoea method as a contraceptive. *British Journal of Midwifery*, 13(4):229–232.
- JAYARAMAN, A., MISHRA, V. & ARNOLD, F. 2009. The relationship of family size and composition to fertility desires, contraceptive adoption and method choice in South Asia. *International Perspectives on Sexual & Reproductive Health*, 35(1):29–38.
- JONES, S. 2008. Fertility and population: Interview with John Guillebaud. *South African Journal of Obstetrics and Gynaecology*, 14(1):4–4.
- JOUBERT, G. & EHRLICH, R. 2007. *Epidemiology: A research manual for South Africa*. Second edition. Cape Town: Oxford University Press.
- KAHL, L. 2011. *What is convenience sampling?* Available from: <http://www.wisegeek.com/what-is-convenience-sampling.htm> [2 May 2011].
- KEELE, R. 2011. *Nursing research and evidence-based practice: Ten steps to success*. Available from: [http://books.google.co.za/books?id=0g-f3YzPNU0C&pg=PA62&dq=Population+by+Burns+and+Grove+2010+\(Nursing+Researc](http://books.google.co.za/books?id=0g-f3YzPNU0C&pg=PA62&dq=Population+by+Burns+and+Grove+2010+(Nursing+Researc)

h)+book&hl=en&ei=MEq8TZaCBILB8QPO-  
vnKBQ&sa=X&oi=book\_result&ct=result&resnum=2&ved=0CEYQ6AEwAQ#v=onepag  
e&q&f=false [30 April 2011].

KHAN, S., MISHRA, V., ARNOLD, F. & ABDERRAHIM, N. 2007. Contraceptive trends in developing countries. District Health System comparative reports No. 16. Calverton, MD: Macro International Inc.

KINTU, C.K. 2010. *Men's role in family planning*. Available from: <http://healthdev.net/site/post.php?s=6142> [27 May 2011].

KOTB, M.M., BAKR, I., ISMAIL, N.A., ARAFA, N. & EL-GEWAILY, M. 2011. Women in Cairo, Egypt and their risk factors for unmet contraceptive need: A community-based study. *Journal of Family Planning and Reproductive Health Care*,37(1):26-31.

KUMAR, R. 2005. *Research methodology: A step-by-step guide for beginners*. Second edition. Available from: [http://books.google.co.za/books?id=x\\_kp\\_WmFzoC&pg=PA158&lpg=PA158&dq=internal+consistency+\(research+methodology\)&source=bl&ots=mQl7A\\_de-c&sig=4ILRS2aRZFav4C\\_Fyj3PFzkiTc4&hl=en&ei=kXi-TYPFG8nNswa9u8j8BQ&sa=X&oi=book\\_result&ct=result&resnum=8&ved=0CHAQ6AEwBw#v=onepage&q&f=false](http://books.google.co.za/books?id=x_kp_WmFzoC&pg=PA158&lpg=PA158&dq=internal+consistency+(research+methodology)&source=bl&ots=mQl7A_de-c&sig=4ILRS2aRZFav4C_Fyj3PFzkiTc4&hl=en&ei=kXi-TYPFG8nNswa9u8j8BQ&sa=X&oi=book_result&ct=result&resnum=8&ved=0CHAQ6AEwBw#v=onepage&q&f=false) [2 May 2011].

KUMAR, S.D., PRAMOD, G., ROLI, G., NEERAJ, G. & MANOJ, B. 2011. A study to assess the unmet need of family planning in Gwalio District and to study the factors that help in determining it. *National Journal of Community Medicine*,2(1):28–31.

LADER, D. 2009. *Contraception and sexual health, 2008/2009*. Opinion survey report no. 41. Newport: Office for National Statistics.

LANGSTON, A. 2010. Emergency contraception: Update and review. *Seminars in Reproductive Medicine*,28(2):95–102.



- LLOYD, C.B. & MENSCH, B.S. 2008. Marriage and childbirth as factors in dropping out from school: An analysis of DHS data from sub-Saharan Africa. *Population Studies*,62(1):1–13.
- LOBIONDO-WOOD, G. & HABER, J. 1990. *Nursing research: Methods, critical appraisal, and utilization*. Second edition. St. Louis, MO: The CV Mosby Company.
- LUTALO, T., KIGOZI, G., KIMERA, E., SERWADDA, D., WAWER, M.J., ZABIN, L.S. & GRAY, R.H. 2010. A randomized community trial of an enhanced family planning outreach in Rakai, Uganda. *Studies in Family Planning*,41(1):55–60.
- MA, Q., ONO-KIHARA, M., CONG, L., XU, G., PAN, X., ZAMANI, S., RAVARI, S.M. & KIHARA, M. 2008. Unintended pregnancy and its risk factors among university students in eastern China. *Contraception*, 77:1008–1113.
- MACASSA, G., HALLQVIST, J. & LYNCH, J.W. 2011. Inequalities in child mortality in sub-Saharan Africa: A social epidemiologic framework. *African Journal of Health Sciences*,18(1/2):14–26.
- MACKENZIE, A. 2011. *Factors that affect family planning*. Available from: [www.ehow.com/list\\_7194360\\_factors-affect-family-planning.html](http://www.ehow.com/list_7194360_factors-affect-family-planning.html) [11 October 2011].
- MACPHAIL, C., PETTIFOR, A.E., PASCOE, S. & REES, H.V. 2007. Contraception use and pregnancy among 15–24 year old South African women: A nationally representative cross-sectional survey. *BioMed Central Medicine*,5:1-8.
- MANZINI, N. 2001. Sexual initiation and childbearing among adolescent girls in KwaZulu-Natal, South Africa. *Reproductive Health Matters*,9(17):44–52.
- MATHE, J.K. 2011. Barriers to adoption of family planning among women in Eastern Democratic Republic of Congo. *African Journal of Reproductive Health*, 15(1):69–77.
- MATVEEV, A.V. 2002. The advantages of employing quantitative and qualitative methods in intercultural research: Practical implications from the study of the perceptions of

- intercultural communication competence by American and Russian managers. *Bulletin of Russian Communication*, 168(1):59–67.
- MAVRANEZOULI, I. 2009. Health economics of contraception: Best practice and research. *Clinical Obstetrics & Gynaecology*, 23(2):187–198.
- MAXWELL, J., BELSER, J.W. & DAVID, D. 2007. *A health handbook for women with disabilities*. Berkeley, CA: Hesperian Foundation.
- MELBY, T. 2009. Cultural competency is crucial to reaching Muslims. *Contemporary Sexuality*, 43(9):1–6.
- MINISTRY OF HEALTH. 2009. *Annual report*. Rwanda.
- MORK, R. 2011. *The different methods for family planning*. Available from: <http://www.life123.com/relationships/marriage/family-planning/different-methods-of-family-planning.shtml> [9 April 2011].
- MOULE, P. & GOODMAN, M. 2009. *Nursing research: An introduction*. London: Sage.
- MURTHY, R.K. 2007. *Accountability of citizens on gender and health*. Background paper prepared for the Women and Gender Equity Knowledge Network of the WHO Commission on Social Determinants of Health. Available from: [http://www.who.int/social\\_determinants/resourcesaccountability\\_to\\_citizens\\_wgkn\\_2007.pdf](http://www.who.int/social_determinants/resourcesaccountability_to_citizens_wgkn_2007.pdf) [10 May 2011].
- MUTESI, T. 2011. 2 arrested for abortion. *ORINFOR*. 23 April. Available from: <http://www.orinfor.gov.rw/printmedia/topstory.php?id=2761> [29 April 2011].
- MWALALI, P. & NGUI, E. 2009. Reduction in maternal and child mortality in sub-Saharan Africa: The yo-yo effect in delivering on the promises. *Journal of Health Care for the Poor and Underserved*, 20:149–169.

- NAMBI, V.I. (Ed.). 2009. Abortion still a challenge to reproductive health. *The New Times*. Available from: <http://allafrica.com/stories/200906240198.html> [29 April 2011].
- NATIONMASTER. 2005. *Religion demographics: Religious affiliation by country*. Available from: <http://www.sacred-destinations.com/reference/religious-affiliation-by-country.htm> [13 October 2011].
- NDARUHUYE, D.M., BROEKHUIS, A. & HOOIMEIJER, P. 2009. Demand and unmet need for means of family limitation in Rwanda. *International Perspectives on Sexual and Reproductive Health*, 35(3):122–130.
- NDIKUBWAYEZU, G. (Ed.). 2009. Legalise abortion, members of parliaments demand. *The New Times*. Available from: <http://allafrica.com/stories/200907310051.html> [29 April 2011].
- OKECH, T.C., WAWIRE, N.W. & MBURU, T.K. 2011. Contraceptive use among women of reproductive age in Kenya's city slums. *International Journal of Business and Social Science*, 2(1):22–43.
- OLUGBANGA-BELLO, A.I., ABODUNRIN, O.L. & ADEOMI, A.A. 2011. Contraceptive practices among women in rural communities in south-western Nigeria. *Global Journal of Medical Research*, 11(2):1–8.
- ORJI, E.O., OJOFEITIMI, E.O. & OLANREWaju, B.A. 2007. The role of men in family planning decision-making in rural and urban Nigeria. *European Journal of Contraceptive and Reproductive Health Care*, 12(1):70–75.
- PALLONE, S.R. & BERGUS, G.R. 2009. Fertility awareness-based methods: Another option for family planning. *Journal of the American Board of Family Medicine*, 22(2):147-157.
- PLUMMER, M.L., WAMOYI, J., NYALALI, K., MSHANA, G., SHIGONGO, Z.S., ROSS, D.A. & WIGHT, D. 2008. Aborting and suspending pregnancy in rural Tanzania: An ethnography of young people's beliefs and practices. *Studies in Family Planning*, 39(4):281–292.

- POLIT, D.F. & BECK, C.T. 2007. *Nursing research: Principles and methods*. Seventh edition. Philadelphia, PA: Lippincott Williams and Wilkins.
- POLIT, D.F. & BECK, C.T. 2008. *Nursing research: Generating and assessing evidence for nursing practice*. Philadelphia, PA: Lippincott Williams & Wilkins.
- POPULATION COUNCIL. 2008. Results from the Demographic and Health survey. *Study in Family Planning*, 39(2):147–152.
- PRATA, N. 2009. Making family planning accessible in resource-poor settings. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1532):3093–3099.
- QAZI, H.A., HASHMI, A.H., RAZA, S.A., SOOMRO, J.A. & GHURI, A. 2010. Contraceptive methods and factors associated with modern contraceptives in use. *Journal of Family and Reproductive Health*, 4(1):41–45.
- RAHNAMA, P., HIDARNIA, A., SHOKRAVI, A.F., KAZEMNEJAD, A., OAKLEY, D. & MONTAZERI, A. 2010. Why Iranian married women use withdrawal instead of oral contraceptives: A qualitative study from Iran-Art. *Bio Med Central Public Health*, 10(289):289–289.
- REPUBLIC OF RWANDA. 2010. *United Nations General Assembly Special Session on HIV and AIDS*. Country Progress Report January 2008 – December 2009. Rwanda.
- ROMERO-GUTIÉRREZ, G., VACA-ORTIZ, N., PONCE-PONCE DE LEÓN, A.L. & LÓPEZ-MARTÍNEZ, M.G. 2007. Actual use of the lactational amenorrhoea method. *European Journal of Contraception and Reproductive Health Care*, 12(4):340–344.
- ROSENSTOCK, I.R., STRECHER, V.J. & BECKER, M.H. 1994. The health behavior model and HIV behavior change. In: R.J. DiClemente & J.L. Peterson (eds.). *Preventing AIDS: Theories and methods of behavioral interventions*. New York: Plenum Press, 5–24.

- ROSS, J., STOVER, J. & ADELAJA, D. 2009. Family planning programs in 2004: New assessments in a changing environment. *International Family Planning Perspectives*, 33(1):22–30.
- ROY, G. 2010. Injectable contraception. *Seminars in Reproductive Medicine*, 28(2):126–132.
- RULAND, C.D. 2003. Abstinence and delayed sexual initiation. *YouthNet.U.S.* <http://www.fhi360.org/NR/rdonlyres/esb6xiux6kbssmtlhxhdfobd5u2fu6e3x3wfoxy4yk5rkzqexgz4odj6lqqakgkt3bjal7pq54bwxp/Issue8.pdf>. [11 March 2011]
- RYERSON, W.N. 2010. *Population: The multiplier of everything else*. Santa Rosa. California, USA: Watershed Media.
- SILLS, J. (Ed.). 2011. Family planning: Look beyond access. *American Association for the Advancement of Science*, 331:1264–1265.
- SMITH, R., ASHFORD, L., GRIBBLE, J. & CLIFTON, D. 2009. *Family planning saves lives*. Fourth edition. Population Reference Bureau. Washington, DC.
- SOLO, J. 2008. Family planning in Rwanda: How a taboo topic becomes priority number one. *IntraHealth International*, 1–34.
- SRIKANTHAN, A. & REID, R.L. 2008. Religious and cultural influences on contraception. *Journal of Obstetrics and Gynaecology Canada*, 30(2):129–137.
- STACEY, D. 2008. *Natural contraceptive methods: Natural family planning options*. Available from: <http://contraception.about.com/od/naturalmethods/tp/behavioral.htm> [8 April 2011].
- SUBRAMANIAN, L., MCGRATH, N., NDLOVU, H. & GAFOS, M. 2008. Family planning methods among women in a vaginal microbicide feasibility study in rural KwaZulu-Natal, South Africa. *African Journal of Reproductive Health*, 12(2):45–63.
- TEDDER, J. 2011. The world at 7 billion, and growing. *VOA Special English Health Report*. Mumbai.

- THAXTON, M. 2007. *Integrating population, health, and environment in Kenya*. Available from: <http://www.prb.org/pdf07/phe-kenya.pdf> [29 December 2008].
- THE WORLD FACTBOOK. 2011. *Africa: Rwanda*. Available from: <https://www.cia.gov/library/publications/the-world-factbook/geos/rw.html> [22 November 2011].
- TIWARI, M. 2010. *Family planning methods*. Available from: <http://www.buzzle.com/articles/family-planning-methods.html> [9 April 2011].
- TRADING ECONOMICS. 2011. *Canada unemployment rate at 7.10 percent*. Available from: <http://www.tradingeconomics.com/canada/unemployment-rate> [12 October 2011].
- TRUSSELL, J. 2011. Contraceptive failure in the United States. *Contraception*, 83:397–404.
- TRUSSELL, J. & RAYMOND, E.G. 2011. *Emergency contraception: A last chance to prevent unintended pregnancy*. Available from: <http://ec.princeton.edu/questions/ec-review.pdf> [5 June 2011].
- TSUI, A.O., MCDONALD-MOSLEY, R. & BURKE, A.E. 2010. Family planning and the burden of unintended pregnancies. *Epidemiologic Reviews*, 32(1):152-174.
- TÜRK, R., TERZIOĞLU, F. & EROĞLU, K. 2010. The use of lactational amenorrhea as a method of family planning in eastern Turkey and influential factors. *Journal of Midwifery & Women's Health*, 55(1):e1–e7.
- TWYXCROSS, A. & SHIELDS, L. 2004. Validity and reliability – what's it all about? Part 1: Validity in quantitative studies. *Paediatric Nursing*, 16(9):28-28.
- UNDIE, C.C. & RAMARAO, S. 2010. *Community mobilization for postabortion care in Kenya: Baseline evaluation report*. The RESPOND Project Study Series: Contributions to global knowledge, report no. 2. New York: EngenderHealth/The RESPOND Project.

- UNFPA. 2009. *Giving birth should not be a matter of life and death*. Available from: [http://www.unfpa.org/webdav/site/global/shared/safemotherhood/docs/maternalhealth\\_fact\\_sheet\\_en.pdf](http://www.unfpa.org/webdav/site/global/shared/safemotherhood/docs/maternalhealth_fact_sheet_en.pdf) [17 October 2011].
- UNITED STATES GOVERNMENT. 2011. *United States unemployment rate at 9.10 percent*. Available from: <http://www.tradingeconomics.com/united-states/unemployment-rate> [12 October 2011].
- WABAKI, W. 2006. Population growth continues to drive up poverty in Uganda. *Lancet*, 367(9510):558–558.
- WEAVER, K. & OLSON, J.K. 2006. Understanding paradigms used for nursing research. *Journal of Advanced Nursing*, 53(4):459–469.
- WESTLEY, E. & GLASIER, A. 2010. *Emergency contraception: Dispelling the myths and misperceptions*. New York: Bull World Health Organization.
- WHITE, J.S. & SPEIZER, I.S. 2007. Can family planning outreach bridge the urban-rural divide in Zambia? *BioMed Central Health Services Research*, 7:143–143.
- WHITERS, M.H., TAVROW, P. & ADINATA, N.A. 2011. Do ambivalent women have an unmet need for family planning? A longitudinal study from Bali, Indonesia. *Women's Health Issues*, 30(20):1–6.
- WHO (WORLD HEALTH ORGANIZATION). 2008a. *Birth spacing: Cluster representatives and health volunteers guide*. WHO Eastern Mediterranean.
- WHO (WORLD HEALTH ORGANIZATION). 2008b. *Repositioning family planning: Guidelines for advocacy*. Washington DC: World Health Organization. Available from [www.africahealth2010.aed.org](http://www.africahealth2010.aed.org). [20 May 2011]
- WHO (WORLD HEALTH ORGANIZATION). 2009a. *Family planning for health and development: Actions for change*. Uganda.

- WHO (WORLD HEALTH ORGANIZATION). 2009b. *Women and health: Today's evidence tomorrow's agenda*. Geneva.
- WHO (WORLD HEALTH ORGANIZATION). 2010. *Sexual and reproductive health. Packages of interventions for family planning, safe abortion care, maternal, newborn and child health*. Geneva.
- WHO (WORLD HEALTH ORGANIZATION). 2011. *Emergency contraceptive. Fact sheet no. 244*. Available from: [www.who.int/mediacentre/factsheets/fs244/en/](http://www.who.int/mediacentre/factsheets/fs244/en/) [16 October 2011].
- WILMOTH, J., MATHERS, C., SAY, L. & MILLS, S. 2010. Maternal deaths drop by one-third from 1990 to 2008: A United Nations analysis. *Bulletin of the World Health Organization*. Geneva.
- WIRE, T. 2009. *Fewer emitters, lower emissions, less cost. Reducing future carbon emissions by investing in family planning: A cost/benefit analysis*. London: London School of Economics.
- WU, J., MELDRUM, S., DOZIER, A., STANWOOD, N. & FISCELLA, K. 2008. Contraceptive non-use among US women at risk for unplanned pregnancy. *Contraception*, 78(4):284–289.
- YUE, K., O'DONNELL, C. & SPARKS, P.L. 2010. The effect of spousal communication on contraceptive use in Central Terai, Nepal. *Patient Education and Counselling*, 81:402–408.
- ZURAWIN, R.K. & AYENSU-COKER, L. 2007. Innovations in contraception: A review. *Clinical Obstetrics and Gynaecology*, 50(2):425–459.



## Appendix 1: Ethical approval



## Appendix 2: Authorisation letter from Nyagatare District

Nyagatare District

East Province

Rwanda

July 29<sup>th</sup>, 2011

Mr Desire Urindwanayo

School of Nursing

Howard College

University of KwaZulu-Natal

PO Box 4041

Durban

Re: Permission to undertake your research project

Reference made to your letter dated June 10<sup>th</sup>, 2011 requesting a permission to conduct your research in Nyagatare District to the five health centers (Nyagatare, Rukomo, Rurenge, Bugaragara and Mimuli), the research title "Exploring the factors influencing family planning methods in Nyagatare District, Rwanda". I am pleased to inform you that the permission is granted to you.

Sincerely yours,

Dr Benon Rukunda

The Director General of Nyagatare District



CC:

Responsible of Nyagatare Health Center

Responsible of Bugaragara Health Center

Responsible of Mimuli Health Center

Responsible of Rurenge Health Center

Responsible of Rukomo Health Center

### Appendix 3: Authorisation from Rukomo Health Centre

Rukomo Health Center

Nyagatare District

East Province

Rwanda

July 29<sup>th</sup>, 2011

Desire Urindwanayo

School of Nursing

Howard College

University of KwaZulu-Natal

PO Box 4041

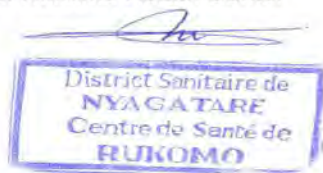
Durban

Re: Permission to undertake your research project

Reference made to your letter dated June 10<sup>th</sup>, 2011 requesting a permission to conduct your research in our Health Center and given the authorization from Nyagatare District. I am pleased to inform you that the permission is granted to you.

Sincerely yours,

Responsible of Rukomo Health Center



#### Appendix 4: Authorisation from Rurenge Health Centre

Rurenge Health Center  
Nyagatare District  
East Province  
Rwanda  
July 29<sup>th</sup>, 2011

Desire Urindwanayo  
School of Nursing  
Howard College  
University of KwaZulu-Natal  
PO Box 4041  
Durban

Re: Permission to undertake your research project

Reference made to your letter dated June 10<sup>th</sup>, 2011 requesting a permission to conduct your research in our Health Center and given the authorization from Nyagatare District. I am pleased to inform you that the permission is granted to you.

Sincerely yours,

Responsible of Rurenge Health Center



## Appendix 5: Authorization from Nyagatare Health Centre

Nyagatare Health Center

Nyagatare District

East Province

Rwanda

July 29<sup>th</sup>, 2011

Desire Urindwanayo

School of Nursing

Howard College

University of KwaZulu-Natal

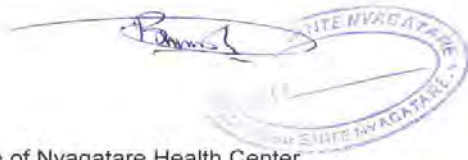
PO Box 4041

Durban

Re: Permission to undertake your research project

Reference made to your letter dated June 10<sup>th</sup>, 2011 requesting a permission to conduct your research in our Health Center and given the authorization from Nyagatare District. I am pleased to inform you that the permission is granted to you.

Sincerely yours,

The block contains a handwritten signature in blue ink, which appears to be 'Desire Urindwanayo'. To the right of the signature is a circular official stamp. The stamp has 'CENTRE NVAGATARE' written along the top inner edge and 'Rwanda' along the bottom inner edge. The center of the stamp contains some illegible text.

Responsible of Nyagatare Health Center

## Appendix 6: Authorisation from Bugaragara Health Centre

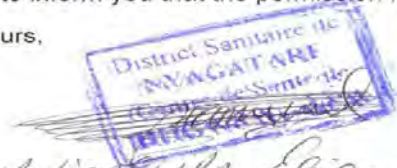
Bugaragara Health Center  
Nyagatare District  
East Province  
Rwanda  
July 29<sup>th</sup>, 2011

Desire Urindwanayo  
School of Nursing  
Howard College  
University of KwaZulu-Natal  
PO Box 4041  
Durban

Re: Permission to undertake your research project

Reference made to your letter dated June 10<sup>th</sup>, 2011 requesting a permission to conduct your research in our Health Center and given the authorization from Nyagatare District, I am pleased to inform you that the permission is granted to you.

Sincerely yours,

A handwritten signature in black ink, which appears to read 'HARUNIRUKA Elio', is written over a blue rectangular official stamp. The stamp contains the text 'District Sanitaire de NYAGATARE' and 'Centre de Santé de BHC'.

Responsible of Bugaragara Health Center

## Appendix 7: Authorisation from Mimuli Health Centre

Mimuli Health Center

Nyagatare District

East Province

Rwanda

July 29<sup>th</sup>, 2011

Desire Urindwanayo

School of Nursing

Howard College

University of KwaZulu-Natal

PO Box 4041

Durban

Re: Permission to undertake your research project

Reference made to your letter dated June 10<sup>th</sup>, 2011 requesting a permission to conduct your research in our Health Center and given the authorization from Nyagatare District. I am pleased to inform you that the permission is granted to you.

Sincerely yours,

Responsible of Mimuli Health Center



## **Appendix 8: Data collection event**

### **Permission**

Permission was requested and obtained from the general director of Nyagatare District.

After receiving permission to carry out the research, extra permission was obtained from separate persons in charge of health centres.

### **Pilot study**

The pilot study was done by researcher with ten women who did not participate in research. The questionnaire was handed to the participants, and the second round was done after three days. This helped the researcher to see where the questionnaire was not clear, and changes were made accordingly. Modification was done to the 15<sup>th</sup> question that asked the method the participant was using at the time. It lacked one method (pills) and the researcher added that item. The 19<sup>th</sup> question asked participants to specify whether they had found out they were pregnant while using a family planning method. That require answering the 20<sup>th</sup> question if the 19<sup>th</sup> question was answered yes. The investigator therefore added the words “if no, go to 21<sup>st</sup> question”.

### **Training**

The investigator trained the nurses who helped during the collection period. After making sure that the questionnaire was understood by those nurses, the researcher handed the questionnaire to them and took their contact details so that when there was question, they could contact the main investigator.

### **Informed consent**

The participants signed the informed consent form so that it could be proof of their voluntary consent to participate in the research.

### **Returns of questionnaire**

The number of questionnaires that went out to the nurses who helped the main investigators as well as the questionnaire that went to the participants was 250. Of these, 141 were returned, with 138 answered correctly. But the 138<sup>th</sup> was excluded by the researcher because of the age. I



noticed that she was 50 years old. The return rate was 56.4% (141/250). The researcher himself collected the answered questionnaires from all health centres.

### **Data collection period**

The data collection period lasted three weeks and one day. In the plan, it was planned to be two weeks.

## **Appendix 9: Information document**

### **Information document**

**Title:** Exploring the factors influencing family planning methods in Nyagatare District, Rwanda.

Researcher: Désiré Urindwanayo  
University of KwaZulu-Natal  
Faculty of Health sciences  
School of Nursing

Dear participant

I am presently a master's student in community health nursing at the University of KwaZulu-Natal. I am currently conducting a research project. The overall aim of this study is to explore the factors influencing family planning methods in Nyagatare District, Rwanda.

We do not ask your name, so the information you provide will be anonymous and confidential. Enclosed you will find a questionnaire that will take approximately 20 minutes for you to complete. The questionnaire consists of a series of questions and you are asked to mark the information that seems most appropriate for you. Participation in this study is strictly voluntary, and you may refuse to participate or you may withdraw from the study at any time without any consequences. Your consent to participate in this study will be confirmed by completing the questionnaire. There are no monetary benefits for participation. If you have any questions or concerns regarding this research project, please feel free to contact me at **urindes@yahoo.fr**, tel: **078 823 2571**. Or you may contact my supervisor, Charlotte Engelbrecht, at **engelbrecht@ukzn.ac.za** or on telephone **031 260 2513**

Thank you for your time and co-operation.

Regards.

Désiré Urindwanayo

Supervisor Charlotte Engelbrecht

## Appendix 10: Consent form

### Consent to participate in research

**Study title:** Exploring the factors influencing family planning methods in Nyagatare District, Rwanda".

You have been asked to participate in a research study. You have been informed about the study by Désiré Urindwanayo and have read the information document which has the details of the study. You may contact me on +27 ) 781 354 652 or +250 0 788 232 571 or **urindes@yahoo.fr** at any time if you have questions about the research or if you are injured as a result of the research. You may also contact my supervisor, **Charlotte Engelbrecht** at **engelbrecht@ukzn.ac.za** or on **031 260 2513**, or the ethics committee via Ms Phumelele Ximba, Tel: 031 **260 3587** Email: **ximbap@ukzn.ac.za**.

Your participation in this research is voluntary, and you will not be penalised or lose benefits if you refuse to participate or decide to withdraw. If you agree to participate in this study, you have to sign the document below in the space provided as a sign of your acceptance of participation.

### Consent

The research study, including the above information, has been described to me verbally. I understand what is expected of me in this study and I voluntarily agree to be a participant.

\_\_\_\_\_  
Signature of participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Witness

\_\_\_\_\_  
Date

## Appendix 11: Questionnaire in English

### Questionnaire to the family planning

Dear participants, you are required to tick the statement best suited to you. It will take 20 minutes to fill in the questionnaire. The information you provide will be kept confidential and will not be shown to other persons. We would very much appreciate your participation in this study.

#### Section A: Socio-demographic

##### 1. Age

How old are you......Years

##### 2. Marital status

1 Single.....

2 Married.....

3 Widow.....

4 Divorced .....

##### 3. Education background

1 None .....

2 Primary.....

3 Secondary .....

4 Tertiary.....

##### 4. Occupation

1 Unemployed.....

2 Trader .....

3 Farmer .....

4 Stockbreeder.....

5 Public worker.....

6 Private worker........

**5. Religion**

1 None .....

2 Christian (Protestant, Anglican, Catholic, Adventist, ADEPR)

3 Muslim .....

4 Traditional indigenous beliefs.....

**6. How many children do you have?.....  Number**

**7. Do you wish to have more children?**

1 Yes .....

2 No .....

**Section B: Perception of family planning**

**8. Do you know about family planning?**

1 Yes .....

2 No .....

**9. What do you know about family planning?**

	Yes (1)	No (2)
Birth spacing		
Use of contraceptives		
Few children		
Prevention of pregnancy		
Pills		
Condom		
Injection		

**10. Is family planning important?**

1 Yes.....

2 No .....

**11. How far do you agree with the following statements?**

		Strongly agree (1)	Agree (2)	Neutral (3)	Disagree (4)	Strongly disagree (5)
11.1	Family planning helps to save money because the clinic charge of delivery is high.					
11.2	A woman becomes pregnant when she is prepared enough “physical and physiological”.					
11.3	You can limit the number of children that you are able to take care of (nutrition, education).					
11.4	A women’s ability to choose the number and spacing of pregnancies plays a significant role in the general health and wellbeing of women, children and the family.					
11.5	A key to a good reproductive health is related to reproductive decision-making, a woman’s ability to make a full informed choice about her reproductive life, to receive information and have access to family planning methods and services.					
11.6	There is a myriad of risk factors affecting reproductive health resulting from an inadequate level of education/awareness and limited access to information on					

	sexual and reproductive health and rights. Therefore, education on sexual health and related rights should be included in the school curriculum.”					
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### Section C: Information

**12.** Where can you receive the information about family planning in community?

	Yes (1)	No (2)
12.1 Health centre		
12.2 Hospital		
12.3 Radio		
12.4 Television		
12.5 Private		
12.6 Friends		
12.7 Family members		
12.8 Spouse/husband/partner		
12.9 Government doctor		
12.10 Private doctor		
12.11 Nurse		
12.12 Community health worker		
12.13 Traditional birth attendant		

13. Did you seek the advice or did they give it on their own

1 I sought advice .....

2 They gave it on their own .....

**Section D: Family planning methods**

14. Do you use family planning currently?

1 Yes .....

2 No.....

15. What method do you use for fertility regulation purposes?

1 Withdrawal .....

2 Outercourse .....

3 Condom .....

4 Lactational amenorrhea method .....

5 Periodical abstinence .....

6 Diaphragm .....

7 Injections .....

8 IUD .....

9 Female and male sterilisation .....

10 Use of calendar.....



11 Pills.....

**16.** How did you learn about the family planning method(s) you have selected above?

	Yes (1)	No (2)
16.1 Health centre		
16.2 Hospital		
16.3 Radio		
16.4 Television		
16.5 Private		
16.6 Friends		
16.7 Family members		
16.8 Spouse/husband/partner		
16.9 Government doctor		
16.10 Private doctor		
16.11 Nurse		
16.12 Community health worker		
16.13 Traditional birth attendant		

**17.** If you are not using family planning,

i) Have you been using particular family planning method(s)

1 Yes .....

2 No .....

ii) If yes, for how long have you been doing it  months

iii) Have you noticed any side-effect as a result of using the family planning method(s)?

1 Yes .....

2 No .....

**18. What are the reasons for not using family planning?**

	Yes (1)	No (2)
18.1 Religious prohibition		
18.2 Spouse hates it		
18.3 Desire for male child		
18.4 Desire for female child		
18.5 Fear of side-effects		
18.6 Reduced coital satisfaction		
18.7 I am afraid to kill my children		
18.8 Not aware of the method to be used		

**19. Were you using a family planning method at the time you discovered you were pregnant?**

1 Yes .....

2 No.....  If no, go to 21

**20. What method did you use?**

- 1 Pills .....
- 2 IUD (copper T).....
- 3 Injection .....
- 4 Condom .....
- 5 Implants .....
- 6 Fertility awareness method .....
- 7 Withdrawal .....
- 8 Female sterilisation .....
- 9 Male sterilisation .....
- 10 Emergency contraceptive.....
- 11 Lactational amenorrhea method .....
- 12 Standard days method.....

**21. What is the reason that is responsible for pregnancy occurrence when family planning method is being used?**

	Yes (1)	No (2)
21.1 Condom burst		
21.2 Forgot to use method		
21.3 Forgot doctor's appointment for continuation of method		
21.4 Method unavailable at health facility		

**22. Which methods did you discuss with others?**

	Yes (1)	No (2)
22.1 Pills		
22.2 IUD (copper T)		
22.3 Injection		
22.4 Condom		
22.5 Implants		
22.6 Fertility awareness method		
22.7 Withdrawal		
22.8 Female sterilisation		
22.9 Male sterilisation		
22.10 Emergency contraceptive		
22.11 Lactational amenorrhea method		
22.12 Standard days method		

**23. Did you accept (a) family planning method(s)?**

1 Yes .....

2 No.....

**24.** Which method(s) did you accept?

	Yes (1)	No (2)
24.1 Pills		
24.2 IUD (copper T)		
24.3 Injection		
24.4 Condom		
24.5 Implants		
24.6 Fertility awareness method		
24.7 Withdrawal		
24.8 Female sterilisation		
24.9 Male sterilisation		
24.10 Emergency contraceptive		
24.11 Lactational amenorrhea method		
24.12 Standard days method		

**Section E. Reproductive information**

**25.** How old were you when you had sex for the first time?  years

**26. Why did you have sex for the first time?**

	Yes (1)	No (2)
26.1 Marriage		
26.2 Love for partner		
26.3 Requested by partner		
26.4 Peer pressure		
26.5 Rape		
26.6 Money and other material benefits		

**27. Have you ever given birth?**

1 Yes.....

2 No.....

**28. Have you ever given birth to a boy or girl who was born alive but later died?**

1 Yes .....

2 No.....

**29. How many boys have died? And how many girls have died**

29.1 Boys dead .....

29.2 Girls dead .....

**30.** Are you pregnant at the moment?

1 Yes.....

2 No.....

3 Unsure .....

**Section F. Abortion information**

**31.** Have you heard about termination of pregnancy (abortion)?

1 Yes .....

2 No .....

**32.** If yes, what do you know about it?

	Yes (1)	No (2)
Means for fertility regulation		
Violation of child's rights		

**33.** Where does abortion take place?

	Yes (1)	No (2)
33.1 Home		
33.2 Tradition healer		
33.3 Clinic		
33.4 Hospital		

**34.** If you could access termination of pregnancy services, would you use it if you got pregnancy unintentionally?

1 Yes .....

2 No .....

Thank you for your time!!



## Appendix 12: Questionnaire in Kinyarwanda

### Ibibazo bigendanye no kuringanyiza imbyaro

Murasabwa gushyira akamenyetso (✓)ahaberanye nuko mubitekereza. Bizabatwara iminota 20 gusubiza neza uru rutonde rw'ibibazo. Amakuru muraduha azagirwa ibanga. Tubashimiye gufatanya natwe muri ubu bushakashatsi.

#### Igice cya A: Imyirondoro

##### 1 Imyaka

Ufite imyaka ingahe ?.....Umubare

##### 2 Irangamimerere

1 Ingaragu .....

2 urubatse .....

3 umupfakazi .....

4 watandukanye n'uwo mwashakanye .....

##### 3 Amashuri wize

1 ntayo .....

2 amashuri abanza .....

3 amashuri yisumbuye .....

4 kaminuza .....

##### 4 Umwuga

1 Ntakazi .....

2 umucuruzi .....

3 umuhinzi .....

4 umworozi .....

5 Umukozi wa Leta .....

6 Umukozi w'imiryango itegamiye kuri leta cyangwa yigennga.....

##### 5 Idini

1 Ntadini .....

2 Ndi umukristo (umuporoso, umwangilikani, umugaturika, umupentekoti)

3 umwisilamu .....

4 imyizerere ya gakondo agakondo .....

6 Ufite abana bangahe?.....  Umubare

7 Urifuza kugira abana benshi?

1 Yego .....

2 Oya .....

**Igice cya B: Imyumvire mukuringaniza urubyaro**

8 Haba hari icyo uzi kukuringaniza imbyaro?

1 Yego .....

2 Oya .....

9 Ni iki waba uzi kukuringaniza imbyaro

	Yes (1)	No (2)
Kutabyara indahekana		
Gukoresha ibintu bituma udasama		
Abana bake		
Kwirinda gutwita		
Ibinini		
Agakingirizo		
Inshinge		

10 Kuringaniza imbyaro byaba ari ingirakamaro?

1 Yego.....

2 Oya .....

**11 Nigute wemeranywa nizi nteruro zikurikira?**

		Ndabyemera Cyane (1)	ndabyemera (2)	Ndifashe (3)	Ntabwo byemera (4)	Simbyemera nabusa (5)
11.1	Kuringiniza urubyaro bifasha kuzigama amafaranga yagatanzwe mugihe cyo kubyara					
11.2	umugore yongera gutwita yaramaze kugira imbaraga no kwitegura					
11.3	ushobora kugira umubare w'abana ushaka kandi ushoboye kurera (kubatunga no kubarihira mumashuli)					
11.4	Abagore bashoboye guhitemo umubare w'abana bifuza kubyara ndetse no kutabyara indahekana bigira ingaruka nziza kumibereho yabo, imibereho y'abana ndetse niy'umuryango					
11.5	urufunguzo rwubuzima bwiza bw'imyororokere y'abagore rugizwe no Gufata imyanzuro mubyo kubyara, umugore					

	kumenya ibigendanye ubuzima by'imyibarukire, kuba abona amakuru ahagije no kuba afite uburenganzira kuburyo bwo kuringaniza imbyaro ndetse akaba yabona serivise yo kuringaniza imbyaro					
11.6	Hari ingaruka nyinshi kandi mbi ziterwa no kutiga/kutamenya bikaba bibuza kubona impuguro cyangwase inyigisho zigendanye n'imyanya myibarukiro. Kubwibyho, inyigisho zigendanye n'ubuzima by'imyororokere zigomba kujya muri gahunda mubyigishwa mumashuri					

### **Igice C: Amakuru**

**12** Nihe ukura amakuru agendanye no kuringaniza imbyaro?

	Yego (1)	Oya (2)
Ku ivuliro		
Ku ibitaro		

Radiyo		
Televiziyo		
Ku ivuliro ryigenga		
Inshuti		
umuntu wo mumuryango		
uwo mwashakanye		
Umuganga wa leta		
Umuganga wigenga		
Umuforomo		
Umukangurambaga w'ubuzima		
Umubyaza wa Kinyarwanda		

**13** Wagiye kubaka amakuru cyangwa bayakwihereye kubushake bwabo?

1 Kubasaba amakuru .....  ..

2 Kubushake bwabo .....

#### **Igice D: Uburyo bwo kuringaniza imbyaro**

**14** Ubu hari uburyo ukoresha mukuringaniza imbyaro?

1 Yego .....

2 Oya.....

**15** Ni ubuhe buryo ukoresha mururinganiza urubyaro?

- 1 Kwiyakana.....
- 2 Imibonano ikorerwa hanze y'ibitsina.....
- 3 Agakingirizo.....
- 4 Konsa.....
- 5 Kwifata mugihe cy'uburumbuke.....
- 6 Agapira.....
- 7 Inshinge.....
- 8 **Agapira gashyirwa mu mura (nyababyeyi).** ......
- 9 Kwifungisha burundu.....
- 10 Gukoresha Kalendali......
- 11 Ibinini.....

**16** Nigute waba waramenye ubwo buryo wahisemo aho hejuru?

	Yego (1)	Oya (2)
Ku ivuliro		
Ku ibitaro		
Radiyo		
Televisiyo		

Ku ivuliro ryigenga		
Inshuti		
umuntu wo mumuryango		
uwo mwashakanye		
Umuganga wa leta		
Umuganga wigenga		
Umuforomo		
Umukangurambaga w'ubuzima		
Umubyaza wa Kinyarwanda		

**17** Niba udakoresha uburyo bwo kuringaniza urubyaro,

iv) Waba warigeze ukoresha uburyo runaka uri kuringaniza urubyaro ?

1 Yego .....

2 Oya.....

v) Niba ari yego waba warabukoresheje mugihe kingana gite? Amezi

vi) Hari ingaruka mbi waba waragize bitewe no gukoresha uburyo runaka bwo kuringaniza urubyaro?

1 Yego .....

2 Oya.....

**18** Ni izihe mpamvu zaba zituma uburyo bwo kuringaniza urubyaro budakoreshwa?

	Yego (1)	Oya (2)
Idini ntiribemerera		
umugabo arabyanga		
Gushaka umwana wumuhungu		
Gushaka umwana w'umukobwa		
Ingaruka mbi z'uburyo bwo kuringaniza urubyaro		
Bigabanya uburyohe mumibonano mpuzabitsina		
Mbananga kwiycira abana		
Kutamenya uburyo bwo kuringaniza urubyaro		

**19** Waba warakoreshaga uburyo bwo kuringaniza urubyaro mugihe wamenyeko utwite?

1 Yego .....

2 Oya.....

**20** Ni ubuhe buryo wakoreshaga?

1 Ibinini.....

2 IUD **Agapira gashyirwa mu mura (nyababyeyi).** .

3 Inshinge.....

4 Agakingirizo.....

5 Agapira ko mukaboko.....

6 Kugenzura igihe cy'uburumbuke.....

7 Kwiyakana.....



- 8 Kwifungisha burundu ku umugore.....
- 9 Kwifungisha burundu ku umugabo.....
- 10 Ibinini bya bukeye.....
- 11 Konsa.....
- 12 kumara iminsi.....

**21** Ni izihe mpamvu zaba zitera gusama mugihe umuntu ari gukoresha uburyo runaka bwo kuringaniza urubyaro?

	Yes (1)	No (2)
Gucika kw'agakingirizo		
Kwibagirwa gukoresha uburyo wahisemo		
Kwibagirwa gahunda muganga yaguhaye yo kurya kumureba		
Uburyo umuntu akoresha ntabuhari ku ivuliro		

**22** Ni ubuhe buryo waba waraganiriyeho nabandi?

	Yego (1)	oya (2)
Ibinini		
<b>IUD Agapira gashyirwa mu mura (nyababyeyi)</b>		
Inshinge		
Agakingirizo		
Agapira ko mukaboko		
Kugenzura igihe cy'uburumbuke		

Kwiyakana		
Kwifungisha burundu ku umugore		
Kwifungisha burundu ku mugugabo		
Ibinini bya bukeye		
Konsa		
kumara iminsi		

**23** Hari uburyo bwo kuringaniza urubyaro wahise uhitamo?

1 Yego.....

2 Oya.....

**24** Ni ubuhe buryo wahise uhitamo?

	Yego (1)	Oya (2)
Ibinini		
<b>IUD Agapira gashyirwa mu mura (nyababyeyi)</b>		
Inshinge		
Agakingirizo		
Agapira ko mukaboko		
Kugenzura igihe cy'uburumbuke		
Kwiyakana		
Kwifungisha burundu ku umugore		
Kwifungisha burundu ku mugugabo		

Ibinini bya bukeye		
Konsa		
kumara iminsi		

**Igice E. Amakuru y' imyororokere.**

**25** Watangiye gukora imibonano mpuzabitsina ufite imyaka ingahe?  Imyaka

**26** Ni igiki cyatumye ukora imibonano mpuzabitsina icyogihe?

	Yego (1)	Oya (2)
nakoze ubukwe		
Nakundaga inshuti yanjye cyane		
Inshuti yanjye yarabinsabye		
kubihatwa n'Urungano		
Gufatwa kungufu		
Amafaranga n'ubundi bufasha		

**27** Waba warabyaye?

1 Yego.....

2 Oya.....

**28** Waba warigeze kubyara umuhungu cyangwa umukobwa ari muzima nyuma yaho akaza kwitaba Imana?

1 Yego .....

2 Oya.....

**29** Haba harapfuye abahungu bangahe? Ni abakobwa bangahe bapfuye?

1 Abahungu bapfuye .....

2 Abakobwa bapfuye .....

**30** Ubu waba utwite?

1 Yego.....

2 Oya.....

3 Simbizi neza .....

**Igice F: Amakuru k' ugukuramo inda**

**31** Waba warumvishe ibigendanye no gukuramo inda?

1 Yego .....

2 Oya .....

**32** Niba ari yego, ni ibiki ubiziho?

	Yego (1)	Oya (2)
Uburyo bwo kuringaniza urubyaro		
Kwica uburenganzira bw'umwana		

**33** Ni he bakuriramo inda?

	Ygo (1)	Oya(2)
Murugo		
Kumuvuzi waghanga		
Kwivuliro		
Kubitaro		

**34** Ubaye wabona aho bakuramo inda, ushobora kujyayo gukuramo inda uramutse waratwite utabitegenyaga?

1 Yego .....

2 Oya .....

Urakoze!!

## **Appendix 13: Declaration of proofreading from editor**

**Jackie Viljoen**

**Language Editor and Translator**

Accredited member of the South African Translators' Institute No 1000017

Member of the Professional Editors' Group (PEG)

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### **DECLARATION**

I hereby certify that the thesis for the degree of Master of Nursing (Community Health Nursing) by Désiré Urindwanayo was properly language edited.

Title of thesis:

**Exploring the factors influencing family planning methods in Nyagatare district, Rwanda**



**JACKIE VILJOEN**

Strand

South Africa

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