# CORRELATES OF ABORTION, LEVEL OF EDUCATION, MARITAL STATUS AND HIV SEROPOSITIVE STATUS IN KENYATTA NATIONAL HOSPITAL

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# DECLARATION

I, Diana Wangeshi Njuguna declare that this thesis is my original work and has not been presented for a degree in any other university or for any other award.

Signature…………………………………………..Date………………………………

# CERTIFICATE OF APPROVAL

This thesis submitted as partial fulfilment for the award of Master of Science Degree in Medical/Surgical Nursing of The University of Nairobi with our approval as supervisors.

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# DEDICATION

I passionately dedicate this work to my loving husband, Mr. Nicholas Wambua and our daughters; Daniella and Natasha.

# ACKNOWLEDGEMENT

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# LIST OF ACRONYMS/ABBREVIATIONS

**AIDS**          **-**Acquired Immunodeficiency syndrome

**APHRC**        -Africa Population and Health Research Centre

**ERC**          -Ethics & Research Committee

**HAART**        **-** Highly Active Antiretroviral Therapy

**HIS**          **-** Health Information System

**HIV**          **-**Human Immunodeficiency Virus

**KAIS**         -Kenya AIDS Indicator Survey

**KNH**          **-** Kenyatta National Hospital

**MOH**         -Ministry of Health

**PAC**          **-**Post abortion care

**PMTCT**        **-**Prevention of Mother to Child Transmission

**PR**           **-**Pregnancy related

**SPSS**         **-**Statistical Package of Social Science

**UON**         -University of Nairobi

**WHO**         **-**World Health Organization

**WLWHIV**      - Women living with HIV

# OPERATIONAL DEFINITIONS

**Abortion** - termination of pregnancy before the fetus is viable. This includes induced and spontaneous abortions.

**Correlation**- the degree and direction of association of variable phenomena; how well one can be predicted from the other.

**Family planning** - ability of an individual and/or couples to anticipate and attain their desired number of children, spacing and timing of their births.

**HIV Prevalence** - The proportion of people in a population who are infected with HIV at a specific point in time.

**Induced abortion** – expulsion of a pregnancy intentionally by the administration of drugs or by mechanical means.

**Mistimed pregnancy** – pregnancy that occurred at a time it was not wanted but a woman desires to become pregnant at some point in time in the future.

**Pregnancy related death -** is defined as the death of a woman during pregnancy or within one year of the end of pregnancy from a pregnancy complication , a chain of events initiated by pregnancy, or the aggravation of an unrelated condition by the physiologic effects of pregnancy.

**Post abortion care** – care and medical treatment for women after any type of abortion, including incomplete, induced, and spontaneous abortion. It includes emergency treatment for complications of spontaneous or induced abortion and family planning counseling and services , sexually transmitted infection evaluation and treatment and lastly HIV counseling and /or referral for testing(Ybarra et al., 2012).

**Unmet need for family planning** - using low efficacy traditional family planning methods or no methods yet a woman wants to avoid getting pregnant.

**Unintended pregnancy** - pregnancy that was either mistimed or unwanted.

**Unwanted pregnancy** – pregnancy that occurred yet the woman doesn't want to become pregnant then or at any time in the future.

# ABSTRACT

Unsafe abortion is one of the leading causes of maternal morbidity and mortality in Kenya. In 2012, the induced abortion rate was at 48 abortions per 1000 women of reproductive age (MOH, 2013). Each year in the developing world, approximately 15 to 20 percent of pregnancies end in miscarriage, and 67,000 women die from complications related to unsafe abortion. Over 35 million people are living with HIV/AIDS with women being affected more than men (KAIS, 2012). Little has been documented on linking abortion and HIV/AIDS yet the abortion rates remain high. This is attributed to unmet need for contraception methods , inability to negotiate for condom use, restrictive abortion legislation which is common in developing countries.( Orner et al., 2011).The main objective of this study was to establish the correlation between abortion and HIV seropositive status by exploring the associations and extent to which they influence the outcomes. A quantitative descriptive cross sectional hospital based study design was used to conduct the study at Kenyatta National Hospital, Ward 1D. Purposive sampling method was applied to select the study participants and a standard questionnaire issued by trained assistants to collect the required information. Data was analyzed using SPSS version 21.0. Ethical Approval was sorted from the KNH/UON ERC. Abortion rates were very high among respondents aged 20 years. About 33% of the participants had been pregnant before. 66% of these pregnancies ended up in abortion. There was no association between abortion rates and age. There was an association between knowledge of HIV status and the woman's abortion decision. (100% vs 66.7%, p=0.0023). Majority of the participants (35%) were aged between 21 and 25 years. There was an association between those women who had ever had an abortion in their previous pregnancies (p=< 0.0001) and the choice of procuring an abortion. There is a significant association between having an aborttion and planning to have one among HIV seropositive women(p= 0.002). Personal values came out strongly after HIV status as reasons why women procured abortions. (n=19, 16%).This study concludes that HIV seropositive status highly influences a woman's decision to procure an abortion. (90% vs. 62%, p=0.016). Health education and counseling on contraception, HIV and pregnancy should be emphasized more to enable women make informed decisions regarding their reproductive issues in all health facilities. Lastly, more evidence based research on correlates of HIV/AIDs and reproductive health to be encouraged.

# CHAPTER 1

# INTRODUCTION

## *1.1    Background*

Abortion is one of the leading causes of maternal morbidity and mortality across the world due to complications such as severe per vaginal bleeding, incomplete abortion, septic abortion, infertility and death. Child bearing among people living with HIV is a social controversial issue as the wellbeing of the unborn child and its future are at stake due to fears of growing up without the love and care of the mother(Chi et al., 2010).

World Health Organization (WHO) defines unsafe abortion as a procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking minimal medical standards or both (WHO, 2013).

Human Immunodeficiency Virus (HIV) is a virus which infects cells of the immune system, destroying or impairing their function. Infection with the virus results in the progressive deterioration of the immune system, leading to immune deficiency. The immune system is considered deficient when it can no longer fulfill its role of fighting infection and disease. Infections associated with severe immunodeficiency are known as opportunistic infections, because they take advantage of a weakened immune system(Mesce & Clifton, 2011). Acquired immunodeficiency syndrome (AIDS) is the most advanced stage of HIV infection. It is defined by the occurrence of any of more than 20 opportunistic infections or HIV-related cancers (WHO, 2013).

Globally, 8.5 million women suffer from complications of unsafe abortions each year. The largest proportion occurs in Africa. One in five pregnancies end up in abortion while one in ten pregnancies end in unsafe abortions ( Singh, 2010).

According to global statistics of 2012 an estimated 35.3 million adults and children are living with HIV. 25 million of these are from Africa. The disease burden of this epidemic still remains

high. An estimated 2.3 million people were newly infected with HIV worldwide. Among the 25 million people living with HIV in Africa, more than two thirds (70%) were from Sub Saharan Africa( WHO, 2013). The prevalence of HIV in Kenya was 5.6 % among adults 15 to 64 years approximately 1,192,000 people. This remains a challenge as the incidence of HIV increases among women of reproductive age ( KAIS , 2012).

Findings of a national study in 2012 revealed that an estimated 266 deaths occurred per 100,000 unsafe abortions (MOH, 2013). Studies conducted in many parts of the world have shown that the abortion rates are higher in countries where abortion is illegal; majority are the developing countries and Kenya is one of them. The Kenyan constitution 2010, article 26(4) permits safe abortion if in the opinion of a trained health professional there is need for emergency treatment or the life of the mother is in danger. The law clearly states the circumstances when abortion is permitted. Due to this, abortion often occurs in undesirable environments that are not regulated in accordance with medical standards. This hinders women's access to safe abortion services.

## 1.2    Statement of the Problem

Unsafe abortion is a procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking minimal medical standards or both (WHO, 2013). Globally, there are 28 abortions for every 1,000 women of childbearing age, and studies show that abortion accounts for 13% of women's deaths during pregnancy and childbirth (WHO, 2012). Unsafe abortions are a major factor which accounts for up to 14% of all maternal deaths worldwide. An estimated 464,690 induced abortions occurred in Kenya in 2012, which corresponded to an induced abortion rate of 48 abortions per 1000 women of reproductive age (15-49 years) (MOH, 2013). According to KNH statistics, 40 abortions are conducted every a month. In 2010 the total number of abortions recorded was 514(KNH; HIS, 2010). KNH serves a cosmopolitan city with a high population.

The incidence of abortion is wide spread across the whole population of Nairobi City and Kenya as a nation. During one of the rotations at the outpatient department I got concerned at the rate at which women came in with abortions. Kenyatta National Hospital being a referral center serving

a large population. On any day an abortion diagnosis would not miss. Further assessment of these women found them to be HIV positive and they were not aware of their HIV status initially. Most of those that tested HIV positive were extremely devastated; this triggered some interest in me to try and seek the answers to events and factors leading to their decision to undergo an abortion.

Kenya AIDS Indicator Survey (KAIS) preliminary report revealed that HIV prevalence was 5.6 % among adults 15 to 64 years. These results indicated that more women than men were infected; women at 6.9% and men at 4.4%. These results were translated to approximately 1,192,000 Kenyans living with HIV/AIDS (KAIS, 2012). Health care providers are faced with challenges as the incidence of HIV increases among women of reproductive age. Little has been documented on linking abortion and HIV/AIDS yet the abortion rates remain high. This is attributed to unmet need for contraception methods , inability to negotiate for condom use, restrictive abortion legislation which is common in developing countries(Orner et al., 2011).

Most abortions are conducted in clandestine environments using crude methods like ingesting pesticides, high dosages of other therapeutic drugs and herbal cocktails. Many women end up having complications from these procedures.  They are therefore admitted for post abortion care. Post abortion care puts severe stress on health infrastructure. This include economic burden caused by complications of abortion which lead to high medical expenses, social costs incurred due to stigma and isolation(APHRC, 2013).The health care system uses plenty of its resources for post abortion care. The cost of treating one patient in Uganda for post abortion care is approximately US$130 which totals to nearly US$14 million per year(Hussain, 2013).

One fact is that abortion and HIV remain a massive public health challenge affecting nations throughout the world and the greatest effect being among the young women as confirmed by studies by (Sundaram, 2013) , (MOH, 2013) , (Sousa, Lozano, & Gakidou, 2010) ,(Sedgh, 2010) and (Hussain, 2013) amongst others.

## 1.3    Study Justification

Kenya is currently faced with increasing incidences of abortion and HIV infection(APRHC, 2013). The global abortion prevalence is 28 abortions per 1000 women; in Kenya 48 abortions per 1000 women. The prevalence of HIV in Kenya remains higher than that of men, thus women are faced with challenges when it comes to making reproductive health decisions. In a study in Europe on pregnancies before and after HIV diagnosis the rate of induced abortion increased after a diagnosis of HIV (Ammassari et al., 2013).

There are existing gaps in terms of exploring more on the correlates of abortion, level of education, marital status and HIV. Not much has been documented on the same. Reliable data on unsafe abortion are difficult to obtain especially in those countries where abortion is restricted ; thus the estimates for most developing countries are based on limited and incomplete sources(Sousa et al., 2010).

The research findings of this study will provide an evidence base for improvement of policy formulation and service provision to women seeking to take a safe abortion. It will also contribute to formation of linkages between HIV/AIDS and reproductive health services thereby contributing to the reduction of abortions and eliminating new HIV cases. The findings of this study are addressing the unmet need for contraceptives and reducing barriers to contraceptive use by ensuring that women are provided with the necessary information and they are also offered a range of contraceptive methods to choose from (Sedgh, 2010). Studies have been done mainly on the determinants of abortion and its prevalence but a few have examined the correlation of abortion and HIV seropositive status.

## 1.4    Purpose of the study

The purpose of this study was to determine the correlates of abortion, level of education, marital status and HIV seropositive status. This study identified that HIV seropositive status highly influences a woman's decision to take an abortion.

## 1.5    Hypothesis

There is no significant correlation between abortion, level of education, marital status and HIV seropositive status among women in Kenyatta National Hospital?

## 1.6    Research Questions

1. What are the socio-demographic characteristics of patients presenting with abortion in KNH?
2. What is the prevalence of HIV among patients presenting with unsafe abortion in KNH?
3. Why do HIV positive women taking up abortions?
4. Which factors determine the uptake of FP before the abortion among HIV positive women?
5. What change can be made to the make safe abortion accessible to women?

## 1.7    Study benefits

The study findings will aid in:

1. Better understanding of the correlations between HIV seropositive status and abortion.
2. Improve access to contraceptive services to reduce unintended pregnancy and the need for abortion.
3. Promote access to safe, legal abortion.
4. Make safe abortion services more affordable for women.
5. Advise on family planning and counseling to both HIV positive.

6. Counseling to identify and respond to women's emotional and physical health needs and other concerns.
7. Encouraging HIV positive women to utilize PMTCT services.

## 1.8    Theoretical framework

**Pender's health Promotion Model**

According to Pender (2011) the purpose of the Health Promotion Model is to "Assist nurses in understanding the major determinants of health behaviors as a basis for behavioral counseling to promote healthy lifestyles."

This model assists the patient in making decisions regarding health by making choices which serve to promote and maintain a healthy lifestyle. The individual engages in activities that are possible and the ultimate goal is to get valued outcomes.

The model has three components which interrelate. They include:

- **Individual characteristics and experiences.** This is frequency of similar health behavior in the past and personal factors; biological, psychological and socio-cultural these influence the individual's health behavior hence affect the choices made regarding health promotion.

- **Behavior specific cognitions and affect**. These are the driving forces that prompt one to healthy behavior: perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity related affect, interpersonal influences from family, peers, norms, social support, role models, beliefs and attitudes of relevant others in regard to engaging in health behavior. Situational influences, commitment to a plan of action and lastly immediate competing demands and preferences.

- **Behavioral outcome- health promoting behavior** this is the desired outcome of health decision and preparation of action.

**Application of Pender's Model to the study**

The decision to seek an abortion has many variables influenced by several factors that interrelate. The women seeking an abortion make a decision to proceed to a potentially life threatening practice which they anticipate will relieve them off some unwarranted responsibility. This is the case in majority of women who seek an abortion. There are perceived constraints that mediate the perceived behavior and the commitment to action. Interpersonal influences from family, peers or role models, prior related behavior, situational influences, personal factors all significantly influence a woman's decision to seek an abortion.

## 1.9    *Conceptual framework*

**Perceived benefits of action:**

Improved self esteem

Responsible behavior

(Intervening variables)

**Outcomes**

**Individual characteristics**

**(Independent variables)**

**Prior related behavior:**

Previous abortion

**Perceived barriers of action:**

Financial constraints

**Immediate competing demands and preferences** (high control)

Perceived expected baby interference with life

**Health promoting behavior:**

Uptake of contraceptive

Access to Safe abortion

Reduced abortion complications

Advise on family planning and counseling to HIV positive women.

Utilization of PMTCT

**Activity related affect:**

Unclear conscience

**Personal biological psychological factors:**

Age

Personality

Marital status

Religion

Level of education

Culture

**Interpersonal** influences from family and peers

**Commitment of a plan of action:** change of mind not to abort

**Situational influences:** joblessness, lack of partner support.HIV status.

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# CHAPTER 2

# LITERATURE REVIEW

## *2.1    Introduction*

Abortion is a sensitive and controversial issue with religious, social, cultural, economic and moral dimensions. It is also a public health concern in many countries. In majority of these countries, abortion is illegal and only permitted when the life of the woman is in danger. Despite this, many women conduct abortions which are performed by individual who lack the necessary skills and often in environments which do not conform to medical standards (MOH, 2013).

Abortion has been recognized as one of the leading causes of deaths and injuries to women worldwide and yet it is preventable. The type of skills required to conduct an abortion are varied depending on the medical and legal standards of every country(Sedgh, 2010).

Globally, increasing number of women of child bearing age are infected with HIV  and they find themselves in situations where they must decide whether or not to have children and if they are pregnant whether to keep the pregnancy or terminate it(Gammeltoft et al,, 2010).

Worldwide, some 20-30 million legal abortions are performed each year, with another 10-20 million abortions performed illegally. Illegal abortions are unsafe and account for 13% of all deaths of women because of serious complications. Death from abortion is almost unknown in the United States or in other countries where abortion is legally available(Essig,2010).

Abortion in Kenya is legal only when it is necessary to save a woman's life. It must take place in a hospital, with three medical practitioners certifying that the procedure is necessary.  As stated earlier, the abortion rate is 48 abortions per 1000 women. In Eastern Africa as a whole, there are an estimated 20 abortions per 100 live births. Despite legal restrictions and the medical risks associated with clandestine procedures, Kenyan women obtain abortions from a wide range of providers, including doctors at private clinics, midwives, traditional herbalists and other untrained providers; some women induce abortion themselves.

## 2.2  Abortion

Abortion is defined as the termination of pregnancy by the removal or expulsion from the uterus of a fetus or embryo prior to viability. Viability is the ability of the fetus to survive outside the mother's womb without life support (WHO, 2013). An abortion can occur spontaneously, in which case it is usually called a miscarriage or it can be purposely induced. The term abortion most commonly refers to the induced abortion of a human pregnancy.

Inducing an abortion is primarily determined by the gestation. Either a surgical or medical abortion can be performed. Abortions performed at a young gestation cause less morbidity and mortality compared to an advanced gestation (Monga et. al., 2006).

## 2.3  Incidences and Prevalence of Abortions

Incidence is the rate at which an event occurs; in this case it is the number of new abortion cases occurring during a certain period in a population at risk. In a study carried out in Uganda in February 2013, the Uganda ministry of health estimated the 26% of the maternal deaths were due to unsafe abortions. For every  maternal death many more Ugandan women experience injuries, some severe and some permanent from these unsafe abortions(Summers, 2013).

In Ghana 7% of all pregnancies end in abortion. An estimated 15 abortions are performed for every 1,000 women of reproductive age (15-44) each year(Sedgh, 2010) .

Another reason for a woman to procure abortions is because they have already had the number of children they desired. This could be due to inability to support another child. A woman who had many children and did not want to consider sterilization, abortion was their immediate option. Pregnancy due to rape or abusive marriage resulted to abortion. The reason was fears of social stigma especially towards single women(Orner, de Bruyn, & Cooper, 2011).

## 2.4  Characteristics of Patients Presenting with Abortion

A study conducted in Mexico on determinants of unsafe abortion; pointed out that the most significant determinant of an induced abortion is whether the pregnancy was either wanted or mistimed. Patients coming for unsafe abortions have a low economic status and a low

educational background. Poor access to family planning methods in Mexico either due to knowledge deficit, misuse or failure of contraceptive methods or because of economic and other barriers impeding women from preventing unwanted pregnancies(Sousa et al., 2010).

The incidence of abortion in Ghana was highest among 20-24 year olds and lower in each successive age group. It is also as twice higher in urban areas (21 per 1000 women) than rural areas (10 per 1000 women). The educated women and wealthier women sought for abortion more than the poor uneducated women (Sedgh, 2010). Abortion among young adolescent women is high due to fears of being single mothers, not wanting to get married at an early age and higher levels of sexual activities as evidenced by unintended pregnancies(Bankole, Singh, & Haas, 2012).

Wealthier women have a higher tendency of procuring an abortion since they can afford abortion services from doctors, nurses and clinical officers who have been trained to provide safe procedures. Due to the legal restrictions to offer abortions, these procedures are done in undesirable environments(Hussain, 2013).

The level of education and pursuit for education impacts strongly on a woman's decision to terminate a pregnancy. When women take the career route they desire children less as raising the children interferes with the advancement of their careers as their social role is to be the primary caretakers of children(Narendra, 2010).

Married women in the Sub Saharan Africa countries make up a large proportion of the women seeking abortions particularly because of the motivation to have smaller families. Consequently these women a woman is highly exposed to potential unintended pregnancies. Majority of these women are stable and can afford resources to procure an abortion(Bankole et al.,(2000).

The strong patriarchal authority of men in some cultures makes them be the decision makers concerning family size thus they should choose the contraceptive method. Often than not they choose male controlled methods since they are efficient and inexpensive e.g. coitus interruptus. Unfortunately women bear the consequences of a failed method. Men are also uninformed about modern contraceptive methods(Warriner & Shah, (2010 ).

## 2.5    Reasons for Taking up an Abortion

Every woman seeking an abortion has a reason as to why they came to that decision. In a study conducted in Ghana, the most common reasons that women gave as to why they sought for abortion was low finances for taking care of the child, the desire to delay child bearing, intention to continue schooling and work. A few others cited that their partners did not want the child and that they denied responsibility for the pregnancy. The least said that the abortion was due to health related reasons(Sedgh, 2010).

Lack of support from male partners or families leads to inadequate care for a child thus prompts some women to seek an abortion. Others did not want a child and they were also not ready to have one. Pregnancy due to rape or sexual coercion was another reason (Orner et al., 2011).
Another study in South Africa WLHIV faced disapproval if they became pregnant hence they would not receive support from partners and family in seeking an abortion(Orner et al., 2011).
A cultural preference of sons in India causes women carrying fetuses of daughters to terminate their pregnancies. This practice lies in deeply entrenched social, cultural and economic discrimination against women and girls. Some of the reasons for male child preference include continuation of family lineage, ritual and religious purpose, old age dependence, source of power and upward social mobility(Warriner & Shah, 2010).

## 2.6    Barriers to Safe Abortion

Irrespective of a woman's HIV status, a host of factors constitute barriers to safe abortion. These factors include restrictive abortion laws and policies,socio-cultural and traditional factors, lack of resources which lead women inability and delay in accessing abortion and sexual and reproductive health services(Orner et al., 2011).

Poor access to effective family planning methods due to lack of knowledge ,misuse or failure of the contraceptive methods and economic factors impede women from preventing unwanted pregnancies thus predispose them to seeking an abortion(Sousa et al., 2010).

Socio economic inequalities are a major barrier to safe abortions since the well-off women seek and pay for safe abortions while the disadvantaged women are exposed to unsafe abortion and

the complications. Male partners also influence a woman's choice to use contraceptive due to misconceptions that family planning can cause health problems like infertility. This results in unintended or unwanted pregnancies which end up being terminated(Hussain, 2013).

## 2.7    Utilization of Family Planning

Family planning is a key intervention for improving the health and wellbeing of women and their families. Spouses are a main hindrance to women's uptake of family planning. Most women resort to the use of injectable method of family planning since it is perceived to being discrete. Cultural factors also play a big role in utilization of family planning as some communities believe that a woman should have many children thus the unmet need for family planning(Lauro, 2011).

Summers (2013)   noted that unintended pregnancies are the cause of most abortions in Uganda which leads to unplanned births, unsafe abortions and maternal death and injuries.

In the developing world an estimated 215 million women have an unmet need for contraceptive use. A majority of unintended pregnancies occur among these women who have unmet need for contraceptives; their reasons being concerns about possible side effects, belief that they are not at risk of getting pregnant, poor access to family planning and their partners' opposition to contraception. Thus reducing unmet need for contraception is an effective way to prevent unintended pregnancies, abortions and unplanned births(Mesce & Clifton, 2011).

Mistimed or unwanted pregnancy is the most significant determinant of having an induced abortion. Preventing these unintended pregnancies by embracing family planning will result in the reduction of unsafe abortions(Hussain, 2013).

Both HIV positive and negative women seek abortions due to difficulties in preventing unwanted pregnancies that are largely due to limited access to contraceptive methods rather than HIV status(Orner et al., 2011).

## 2.8    Prevalence of HIV among Patients Undertaking an Abortion

Pregnancy undermines an already compromised health for example in HIV/AIDs. In a study in Vietnam on induced abortion among HIV positive women, one woman after receiving news of

her HIV positive status (she) fainted and lost her pregnancy in the process. Together with her husband they were not able to conceive again. She believed that HIV broke and threatened her life and desire to carry a pregnancy(Chi et al., 2010).

In this study women feared leaving their children behind when they died as this would jeopardize their future. These children would have misery without their parents' care and love. Some women were worried that their children would face stigma and discrimination very well knowing what it entailed living with HIV. Another reason was the torture and agonizing pain these women went through after previous loss of a child due to HIV(Chi et al., 2010).

Majority of the women who had unwanted pregnancies considered abortion as an option after they were diagnosed to being HIV positive. They gave their reasons as having fears of infecting their partners and infants and also uncertainty of care if they were to leave many orphans(Iliyasu et al., 2009).

A study conducted in western Kenya showed that 40% of pregnancy related (PR) deaths were due to miscarriage or induced abortions.the majority of the women were between the age of 25 years and 29 years. Amomg the indirect PR deaths HIV/AIDS  was attributed to 45%. In the same study direct PR deaths ascribed by HIV/AIDS occurred significantly among younger women with a mean age of 29.6 years compared with non HIV/AIDS causes the men age was 34.3 years. Among the women who were HIV positive 52% of them had miscarriages / abortions(Desai et al., 2013).

In Vietnam HIV positive women opted for an abortion after HIV diagnosis. Age, occupation and time of being diagnosed as HIV positive had an association with induced abortion(Chi et al., 2010).

HIV positive women have a desire to become mothers just like their HIV negative counterparts. In a qualitative study of 13 women who had an abortion after being diagnosed as HIV positive, most of them opted to terminate their pregnancies. Due to fear of being unable to care for their children adequately(Bùi et al., 2010).

## 2.9    HIV Seropositive Status and Family Planning

Being HIV infected has a strong impact on contraceptive practice among the HIV positive women. Women use the contraceptives to avoid the risk of unintended pregnancy and disease transmission(Parisi et al., 2008).

An assessment on the correlates of fertility intentions among HIV/AIDS patients in Northern Nigeria indicated that, being HIV positive modified but did not remove reproductive desires. HIV positive women a large proportion of women in the study desired to have children and wanted to use family planning and have similar reproductive choices. However the HIV positive women's family life choices were influenced and shaped by their serostatus(Iliyasu et al., 2009)**.**

The most commonly used family planning method is combined oral contraceptives before HIV diagnosis. After diagnosis with HIV  the male condoms is used more(Iliyasu et al., 2009).

# CHAPTER 3

# METHODS AND MATERIALS

## *3.1    Study Area*

The study was carried out in Kenyatta National Hospital (KNH) ward 1D. KNH was established in 1901. It is the largest referral hospital in Kenya providing specialized medical care, training and research serving the entire country and the region being the second largest referral hospital in Africa. It serves patients within Eastern and Central Africa. Nursing services in KNH have been categorized into Accident and Emergency, Obstetrics/Gynecology/Radiotherapy, Pediatrics , Operating Room Nursing, Surgery (General and Specialized), Orthopedics, Ear/Nose and Throat, Eye/ophthalmology, Medicine, Private (Amenity) wing, Patient Health Education and Research Unit, Counseling and Continuing Education departments. The hospital has a bed capacity of approximately 2000 patients. Ward 1D is an acute gynecology ward, 24 hour unit, with a 40 bed capacity and admits women with any gynecologic illnesses.

## *3.2    Study Design*

A cross sectional study design was used. Quantitative and observation methods were used to collect data. Random sampling method was applied to select the study participants.

## *3.3    Study Population*

The target population was all women admitted in ward 1D during the time of study. All these women had a diagnosis of abortion and they were aged between 15 and 49 years. The target population was limited to this age group as that is the reproductive age according to World Health Organization.

## 3.4   Sample Size

The sample size was determined using the formula recommended by Fisher et al 1998.

Formula              n     $= \dfrac{Z^2 P (1-P)}{d^2}$

Where:

   n = the desired sample size (when the population is greater than 10,000)

   Z = standard normal deviation which is equal to 1.96 corresponding to the 95% confidence limit

    P = prevalence of the issue under study is 48 abortions per 1000 women. = 4.8%

    d = confidence limit of the prevalence (p) at 95% confidence interval = 1 -0.95 = 0.05

Thus,                         $n = \dfrac{1.96^2 \times 0.048\,(1 - 0.048)}{0.05^2}$

            $n = 70.22$

         Therefore the total number of women was 71

## 3.5   Sampling Method

Kenyatta Hospital was purposively selected as it is the biggest referral hospital in Kenya. Purposive sampling method was applied to select the respondents to fill in the questionnaires. Every woman who was admitted to ward 1D with either induced or spontaneous abortion was recruited to participate in the study.

### 3.6    Inclusion/Exclusion Criteria

The inclusion criteria comprised of:

1.  Patients admitted in Ward 1D with a diagnosis of abortion

2.  Women of reproductive age 15 – 49years

3.  All patients consented and were willing to participate in the study

The exclusion criteria included:

1.  Patients who did not consent to take part in the study
2.  Very sick patients who were being treated for other illnesses
3.  Patients with a diagnosis of hydatiform mole

### 3.7    Recruiting and consenting

Study participants were recruited from Ward 1D by research assistants in collaboration with the nurses in the ward. The informed consent was explained. Those who were willing to participate in the study were then recruited for data collection.

### 3.8    Data Collection

A semi structured self-administered questionnaire was used to obtain responses from the study participants. It comprised of five sections. Section 1, 2, 3 sought to elicit demographic, socioeconomic and socio cultural data. This information gave a background of the participant. Section 4 was designed to find out what knowledge the participant had on HIV/AIDs and abortion. Section 5 explored the participants' health promotion practices.

Pre-testing the questionnaire was carried out. The purpose of this pre-test was to ensure validity and reliability. The pre-test gave a feedback on the appropriateness of the questions in the study tool, omissions and modification of some questions. A pilot study was conducted at the Mbagathi District Hospital for a period of 1 week.

Study assistants were recruited from KNH. They included staff nurses in ward 1D. Research assistants were trained on the study objectives, questionnaire orientation and    data collection procedures.

## *3.9    Variables*

### 3.9.1  Dependent variables
Abortion

### 3.9.2  Independent variables

| | |
|---|---|
| Age | Culture |
| HIV seropositive status | Health maintenance practices |
| Demographic characteristics | Family planning method |
| Marital status | Prior related behavior |
| Level of education | Parity |
| Religion | |

### 3.9.3   Outcome variables

Increased uptake of contraception

Access to safe abortion

Reduced complications of abortion

Utilization of PMTCT

## 3.10  Data management

### 3.10.1  Quality Control

At the end of each day during the data collection period, questionnaires were checked for completeness, clarity and consistency. Incomplete and poorly filled questionnaires were discarded.

### 3.10.2  Data Entry

Questionnaires were coded and information entered in the Epidata software.

### 3.10.3  Data analysis

Data from the epidata software was transported to the Statistical Package for Social Science (SPSS) version 21.0, and then analyzed using quantitative data analysis approach. This quantitative approach involved both descriptive and inferential analysis. Descriptive analysis such as frequencies and percentages were used to present quantitative data in form of Tables and graphs. P-values were used to calculate the statistical significance of results obtained. Statistical significance was set at $p<0.05$ so that the results have universally accepted levels of accuracy.

### 3.10.4  Data Presentation

The results were presented in form of Tables, bar graphs and pie charts to represent the conclusion drawn from the data and a narrative explanation used to accompany each pictorial presentation.

## 3.11  Ethical Considerations

Permission to carry out the study was sort and obtained from the KNH/UON Ethics and Research Committee. Further permission was sort from KNH Research Department. An explanation of the study objectives was made in the simplest language to the participants and those willing to participate proceeded to give an informed consent. Anonymity of the participants was assured and maintained throughout the study. Participation was voluntary, and participants were given an option of withdrawing from the study at any point in case they wished.

## 3.12   Limitations

Respondents were providing incomplete information owing to the stigma associated with abortion diagnosis; two participants withdrew from giving their responses halfway through the completion of the questionnaire. Two other participants were selected to replace the two.

## 3.13   Control of biases

Biases were minimized by:

1. Pre-testing the study instrument and a review was done before actual study was conducted.

2. The selection of study sample was done randomly.

3. Questionnaires were verified for completeness

# CHAPTER 4

# STUDY RESULTS

## *4.1 Introduction*

Study findings are presented as obtained from the data analysis. The data was collected from women admitted in Ward 1D at the Kenyatta National Hospital with a diagnosis of abortion. The total number of the respondents was 72.Representing 100% response rate.

## *4.2 Descriptive statistics*

### 4.2.1 Age

Majority of the participants were aged between 21 and 25 (35%). The mean age of the study participants was 25.8 years .Over eighty per cent of the participants were between 18 years and 30 years. The oldest participant was 42 years with the youngest being 18 years.
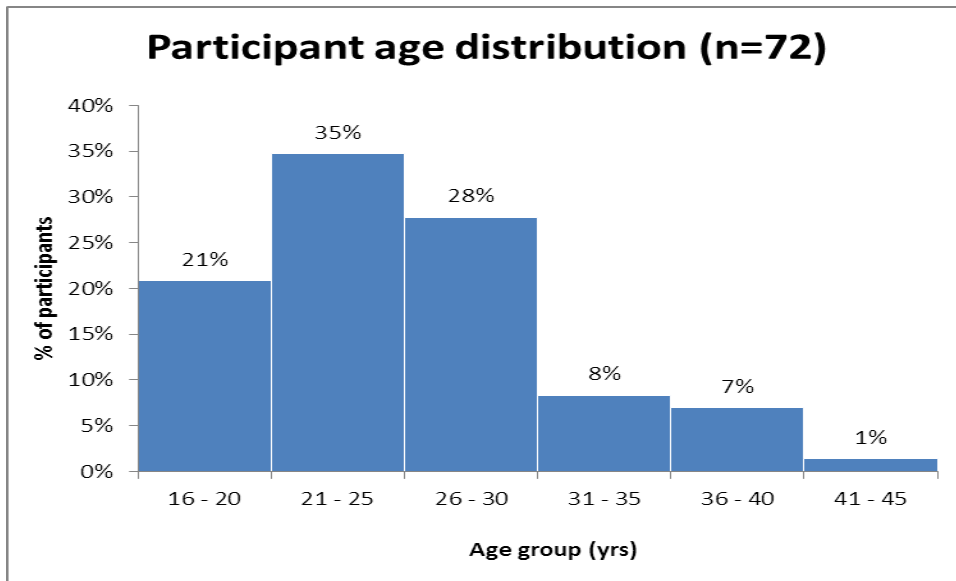


**Figure 1 Distribution of participants by age**

### 4.2.2 Marital status

Forty seven per cent of the participants were married with 8.3% being divorced/separated while 42% were single. The mean marriage age for the women ever married participating in the study was 21.1 with a standard deviation of 3.3. About 68% of women got married between the ages of 18 and 23.

### 4.2.3 Age at marriage
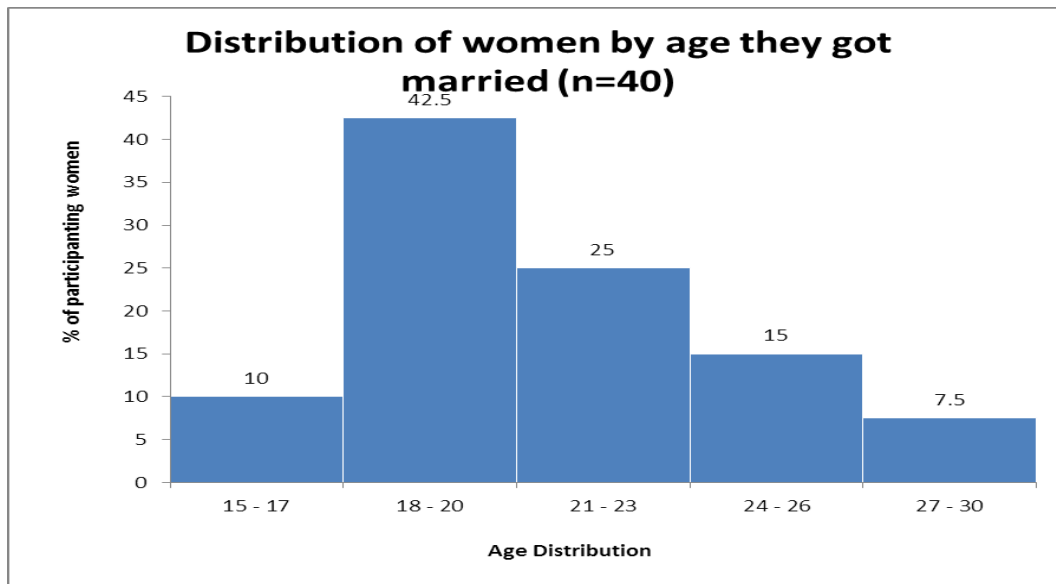


**Figure 2 Distribution of women by age they got married**

### 4.2.4 Level of education

Over fifty per cent of the women had at least secondary education and above. Only 24% had at most attained primary school education. Figure 3 below shows a distribution of women by the highest education they attained.

**Education Status (n = 72)**
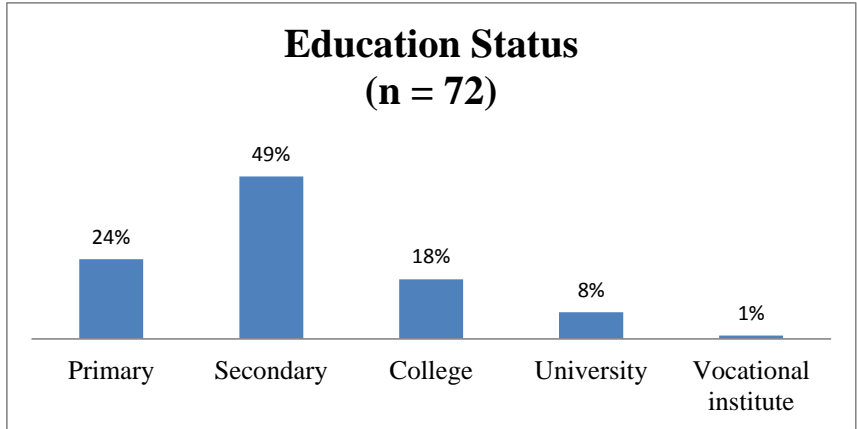
**Figure 3 Highest education levels**

### 4.2.5 Employment

Sixty two per cent (45) of the participating women were working while 32 (73%) of them being gainfully employed while the remaining (13) 27% being self-employed. About a quarter of the women were not working (gainfully employed) with only 14 % being students.

### 4.2.6 Religion

As shown on Table 1 below over 80% of the participants were Christians with 10% being either Hindu or Muslims.

**Table 1 Distribution of participants by religion**

|                 | Frequency | Percent |
|-----------------|-----------|---------|
| Catholic        | 18        | 25.71%  |
| Protestant      | 42        | 60%     |
| Muslim          | 6         | 8.57%   |
| Hindu           | 2         | 2.86%   |
| Other           | 2         | 2.86%   |
| Did not Respond | 2         | 2.86%   |
| Total           | 72        | 100%    |

### 4.2.7 Parity

Fifty six of the women interviewed had been pregnant before. Of these 66% had ended in an abortion while 9% had ended in a miscarriage. Nonetheless a quarter of the previous pregnancies had ended in delivery as can be seen on figure 4 below.
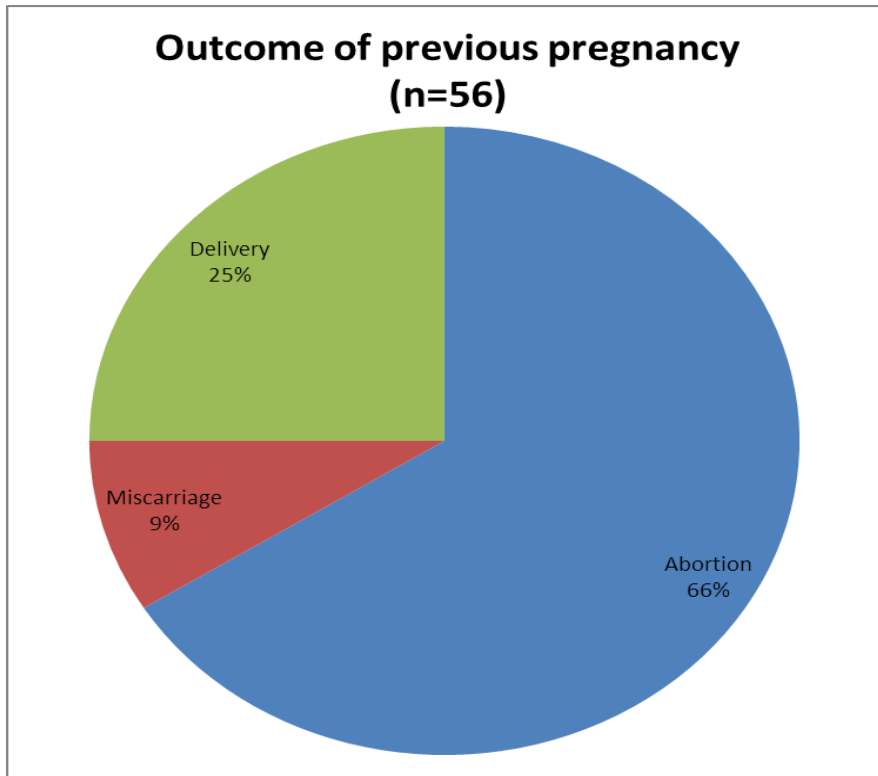


**Figure 4 Proportion of previous pregnancy by outcome**

## *4.3    Abortion occurrence*

Forty seven per cent of the women who had an abortion actually planned to have one with the remaining 52% having not planned. Among the women, 71% of those who planned to abort were aware of a woman who successfully procured an abortion while only 24% of those who never planned to have an abortion were aware of any woman who procured an abortion as can be seen on figure 5 below. In most of the cases the woman they were aware of was their friend. In very few cases (<4%) were the woman they know a relative, acquaintance or colleague.

About 70% of the women who procured an abortion said there is a very low chance they would procure an abortion again if given a chance with 30% agreeing there was a high chance of them procuring an abortion if given a chance.
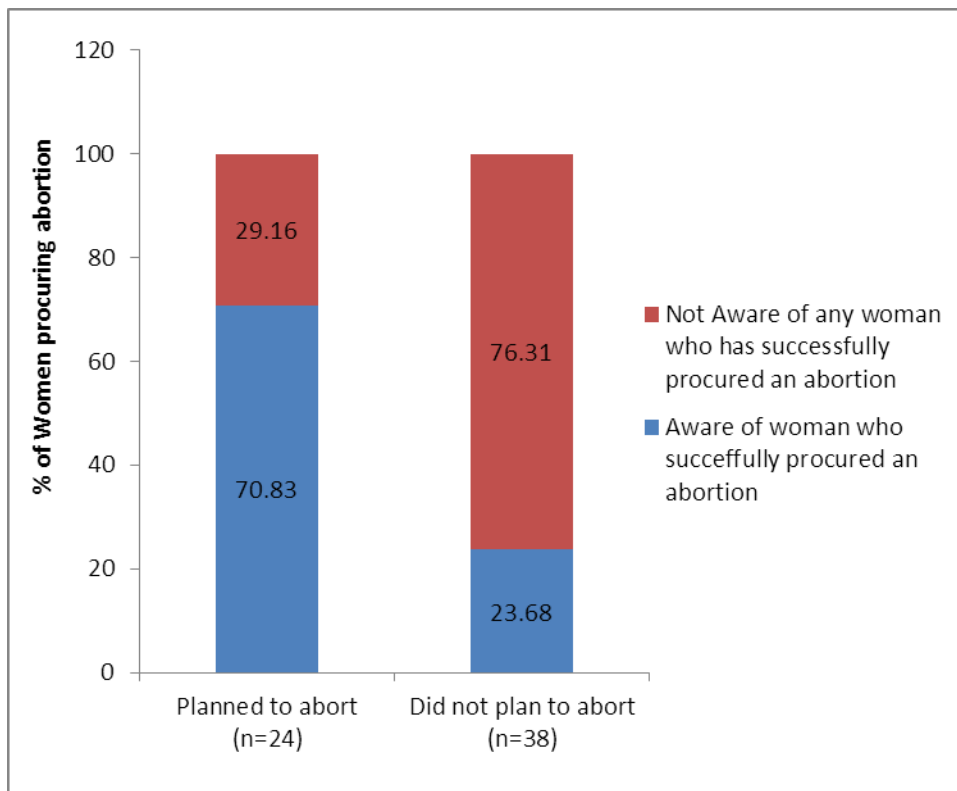


**Figure 5 Comparison of women procuring abortion by whether they planned to abort or were aware of other women who had procured abortion**

## 4.4    Reasons for abortion

Figure 6 below shows reasons for women choosing abortion. Among those who were HIV positive. 68% said the most compelling reason for them to undertake abortion was their HIV status. Personal values, social pressures and economic pressures respectively were noted compelling reasons for abortion among those HIV positive. Among those HIV negative 30% noted economic pressures as the most compelling reason for choosing abortion. Other reasons for choosing abortion include lack of partner support and health related problems. The Table 2 below shows a comparison of reasons for abortion by HIV status.
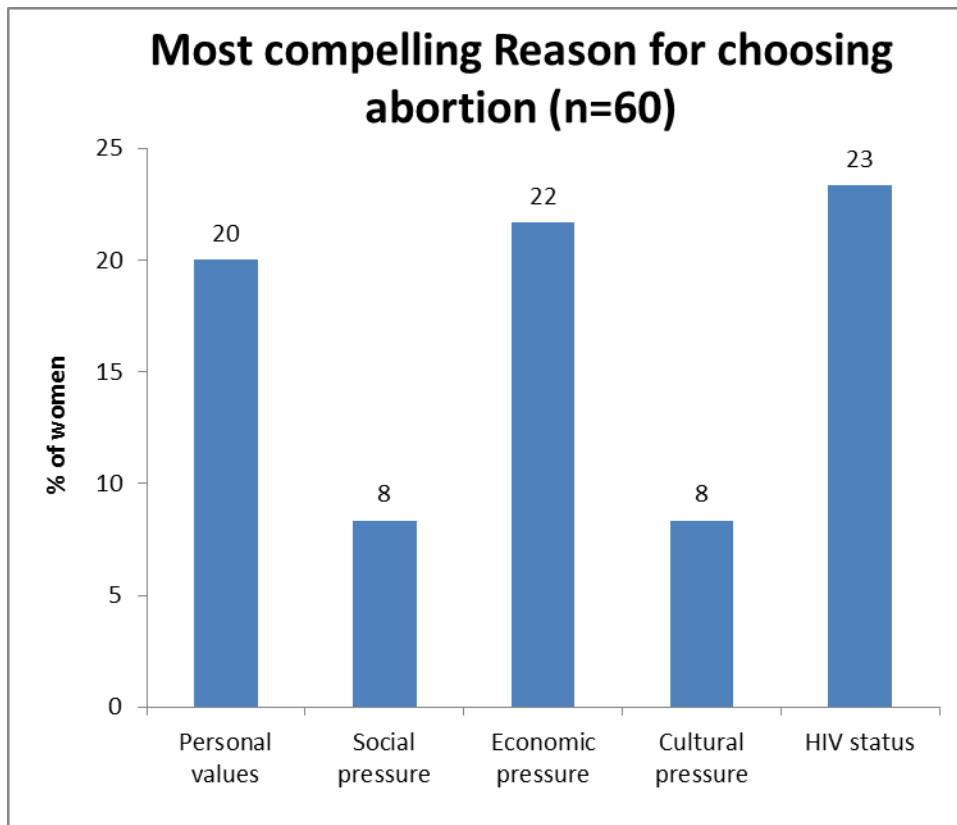


**Figure 6 reasons for choosing abortion**

**Table 2 Comparison of most compelling reasons for abortion by HIV status**

| Reasons for abortion | Negative | Positive |
|---|---|---|
| Personal values | 24% | 16% |
| Social pressure | 5% | 11% |
| Economic pressure | 30% | 5% |
| Cultural pressure | 11% | 0% |
| HIV status | 3% | 68% |
| Other | 27% | 0% |
| Total | 100% (n=41) | 100% (n=19) |

## *4.5 Number of partners*

Over 70% of the women had one partner while 25% had two with the remaining 3% having either three or four partners
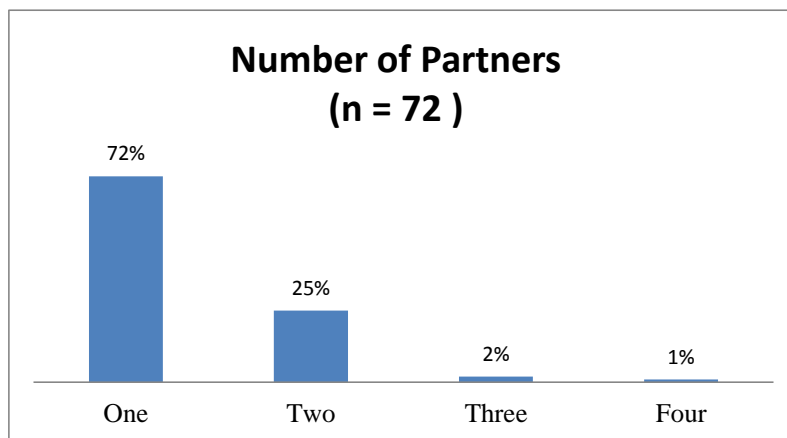


**Figure 7 Distribution of women by number of partners**

## 4.6 Knowledge about HIV/AIDS

All the women participating in the study had ever heard about voluntary testing and counseling for HIV/AIDS. 98% of the women had taken a HIV test, with 60% of the women taking it within the last six months. Over 95% of the women received their test results the last time they tested with 29% being HIV positive and only 4% did not know their status.

Among the participants who were HIV negative, 85.7% of them had not procured prior abortions while 9.5% of those HIV positive had not undertaken abortion previously. Table 3 below shows this comparison.

**Table 3 Comparison of HIV status and abortion**

|  | Ever had an abortion before | Had no prior abortions |
|---|---|---|
| Negative | 56.9% | 85.7% |
| Positive | 37.3% | 9.5% |
| Don't know | 3.9% | 4.8% |
| No response | 2.0% | 0.0% |
| Total | 100% (n=51) | 100% (n=21) |

From the chi square test results on Table 4 below, the Chi square value testing the relationship between HIV status and abortion is 6.256 with a p-value of 0.1. Given this is greater than 0.05 then then there is no relationship between HIV status and ever having done abortions.

**Table 4 Chi square test results for relationship between HIV status and ever having done abortions**

|  | Value | Df | P value |
|---|---|---|---|
| Pearson Chi-Square | 6.256[a] | 3 | 0.100 |
| Likelihood Ratio | 7.339 | 3 | 0.062 |
| Linear-by-Linear Association | 3.651 | 1 | **0.056** |
| Number of Valid Cases | 72 |  |  |

### 4.6.1 Perception of abortion procedures in increasing exposure risk for HIV

According to figure 8 below 75% of the women are of the opinion that abortion procedures undergone increase exposure risk of HIV.
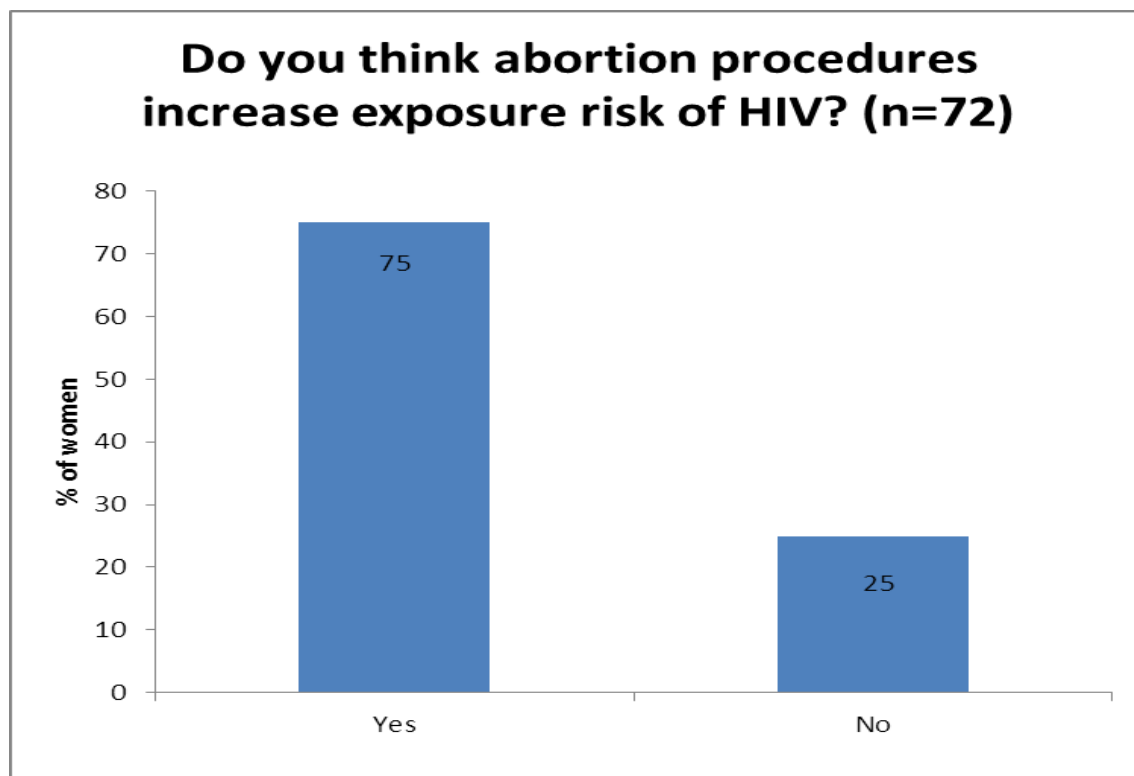


**Figure 8 Participant's opinion on abortion procedures increasing exposure risk of HIV**

## 4.7    Health promotional practices

### 4.7.1   Knowledge on family planning

Only one woman stated she was not aware of family planning methods, this represents about 1% of the studied women. Figure 9 below shows distribution of women by their knowledge of method of contraception.
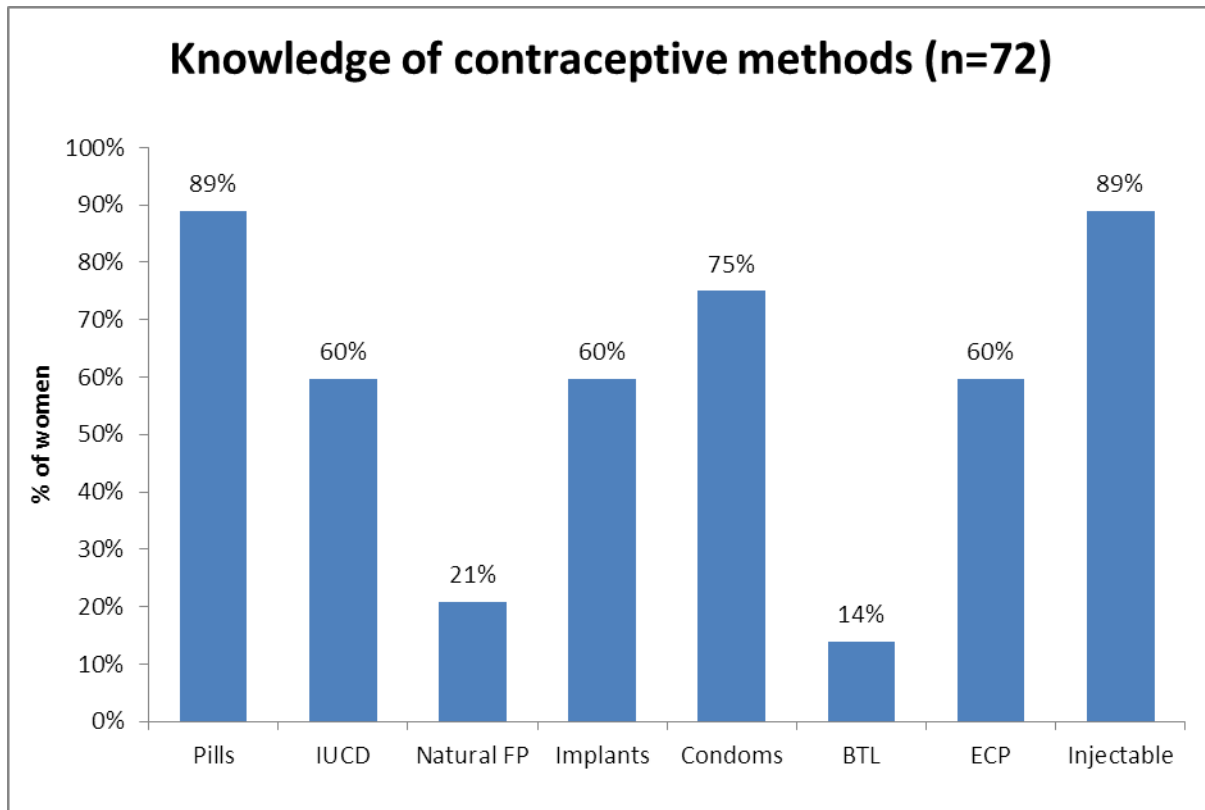


**Figure 9 Distribution of women by knowledge of contraception methods**

### 4.7.2   Contraception use

Eighty three per cent of women had used family planning before they got pregnant with a majority using short term methods e.g. pills(18%), injectable (26%) and condoms(13%). Only 19% of these women had used a long acting family planning method before. About 6% gave no responses and they cited to using herbal family planning.  women did not use family planning giving their reasons as to being young in age, first time pregnancies, religion and culture. Among the women who were HIV negative, 81% of them had ever used FP before they got pregnant

while 86% of those HIV positive had ever used FP before they got pregnant. Figure 11 below shows a comparison of previous FP use by HIV status while Figure10 below shows proportion of women by FP method they used before the got pregnant. Natural family planning was the least used before at 1%.
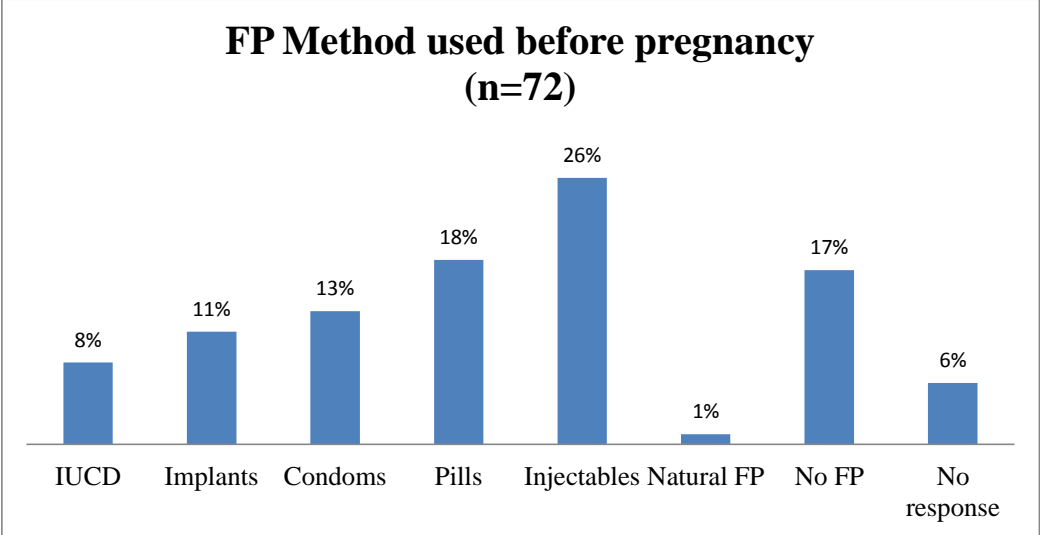


**Figure 10 Proportions of women by FP method they used before they got pregnant**
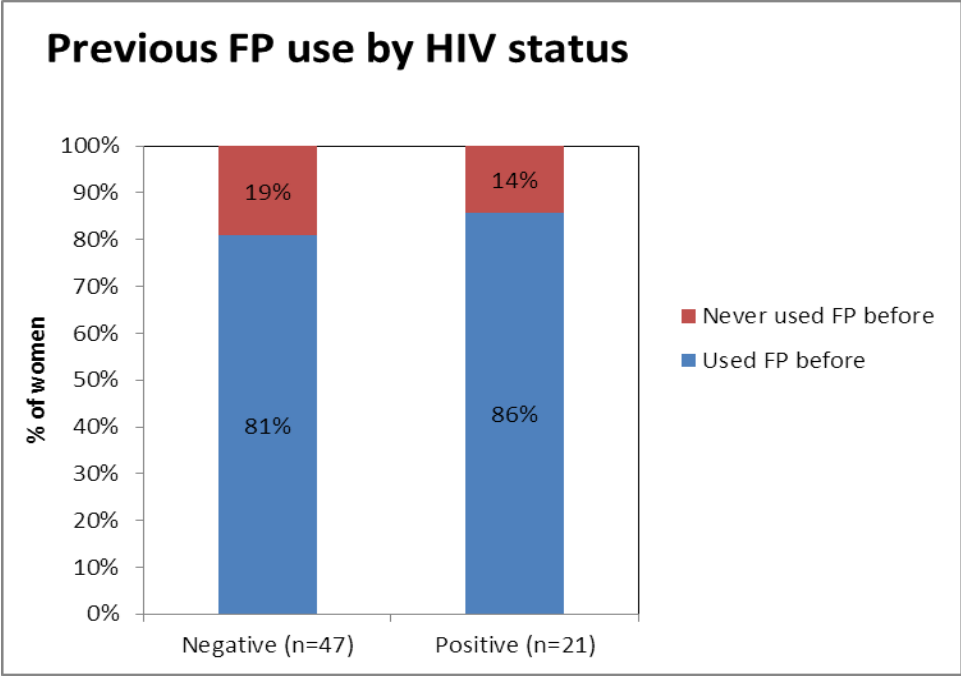
**Figure 11Comparison of previous FP use by HIV status**

Table 5 below shows a comparison of previous FP methods and HIV status of women choosing abortion. Of all the FP methods, injectable were the most used at 34% among those negative and 33% among those positive.

**Table 5 Comparison of previous FP methods and HIV status**

| FP method previously used | HIV Status | |
|---|---|---|
| | **Negative** | **Positive** |
| Pills | 29% | 11% |
| Injectable | 34% | 33% |
| IUCD | 11% | 11% |
| Implants | 11% | 22% |
| Condom | 13% | 22% |
| Natural | 26% | 0% |
| Total | 100% (n=38) | 100% (n=18) |

**Table 6 Chi square results for HIV status and previous FP method use**

|  | Value | Df | P value |
|---|---|---|---|
| Pearson Chi-Square | 3.948[a] | 5 | 0.557 |
| Likelihood Ratio | 4.374 | 5 | 0.497 |
| Linear-by-Linear Association | 1.924 | 1 | 0.165 |
| N of Valid Cases | 56 |  |  |

HIV status and previous FP method use are not related. From chi square Table above the p value for the chi square value of 3.948 is 0.557. This is greater than 0.05 hence no relation.

### 4.7.3 Reasons of discontinuing family planning methods

Among the major reasons listed for stopping to use family planning include: wanted to get pregnant; own choice; health problems; infrequent sex and weight gain. Figure 11 below shows a distribution of women by reasons for stopping to use family planning.
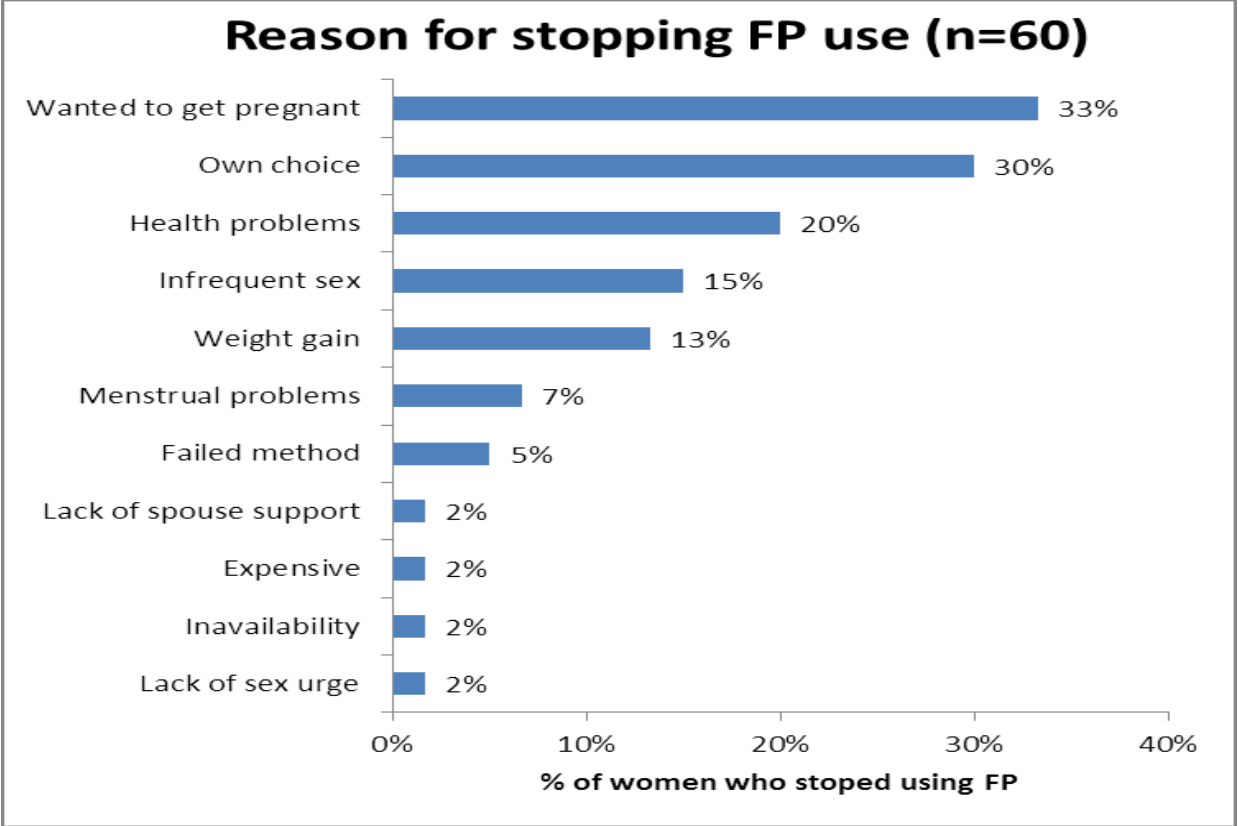
**Figure 12 Reasons for stopping to use family planning**

Among those HIV negative the following were the major reasons noted for stopping FP use: wanted to get pregnant (45.9%), own choice (24%), health problems (21.6%) respectively. Among those HIV positive the following are the major reasons for stopping FP use: Own choice (44.4%), weight gain (27.8%), health problems (22.2%) and infrequent sex (22.2) respectively. Table 7 lists the reasons for stopping FP use by HIV status

**Table 7 Reasons for stopping FP use**

|  | HIV Status | |
| --- | --- | --- |
|  | Negative | Positive |
| Infrequent sex | 8.1% | 22.2% |
| Lack of sex urge | 0.0% | 5.6% |
| Wanted to get pregnant | 45.9% | 16.7% |
| Health problems | 21.6% | 22.2% |
| Menstrual problems | 2.7% | 16.7% |
| Weight gain | 8.1% | 27.8% |
| In availability | 2.7% | 0.0% |
| Lack of spouse support | 5.4% | 5.6% |
| Own choice | 24.3% | 44.4% |
| Total | 100% (n=37) | 100% (n=18) |

## 4.8    Availability and accessibility of family planning commodities

Ninety eight per cent of women participating in the study pointed out those Family planning commodities are available while 94% said they can access the family planning commodities.

## *4.9 Bivariate analysis*

**Table 8 Factors associated with procurement of an abortion (categorical variable)**

| | | Have you ever had an abortion? | | | | |
|---|---|---|---|---|---|---|
| | | Yes | | No | | |
| | | n | % | N | % | P value |
| **What was your marital status at the time you were admitted?** | Married | **22** | **66.67%** | **11** | **33.33%** | 0.692 |
| | Single | **23** | **71.88%** | 9 | **28.13%** | |
| | Divorced/separated | **5** | **83.33%** | 1 | **16.67%** | |
| **What is the highest level of schooling you have attained?** | Primary | **11** | **64.71%** | 6 | **35.29%** | 0.528 |
| | Secondary | **25** | **71.43%** | 10 | **28.57%** | |
| | Vocational institute | **1** | **100.00%** | 0 | **0.00%** | |
| | College | **11** | **84.62%** | 2 | **15.38%** | |
| | University | **3** | **50.00%** | 3 | **50.00%** | |
| **Do you work?** | Yes | **35** | **77.78%** | 10 | **22.22%** | 0.158 |
| | No | **9** | **52.94%** | 8 | **47.06%** | |
| | Student | **7** | **70.00%** | 3 | **30.00%** | |
| **What is your religion?** | Catholic | **15** | **83.33%** | 3 | **16.67%** | 0.552 |
| | Protestant | **28** | **66.67%** | 14 | **33.33%** | |
| | Muslim | **5** | **83.33%** | 1 | **16.67%** | |
| | Hindu | **1** | **50.00%** | 1 | **50.00%** | |
| | Other | **1** | **50.00%** | 1 | **50.00%** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Have you ever been pregnant before?** | Yes | **46** | **82.14%** | 10 | **17.86%** | **<0.0001** |
| | No | **5** | **31.25%** | 11 | **68.75%** | |
| **If yes to question 9 above , what was the outcome of the pregnancy** | Abortion | **36** | **97.30%** | 1 | **2.70%** | **<0.0001** |
| | Miscarriage | **4** | **80.00%** | 1 | **20.00%** | |
| | Delivery | **6** | **42.86%** | 8 | **57.14%** | |
| **Do you have any children??** | Yes | **23** | **69.70%** | 10 | **30.30%** | 0.673 |
| | No | **26** | **74.29%** | 9 | **25.71%** | |
| **If yes, how many children?** | 1 | **7** | **70.00%** | 3 | **30.00%** | 0.733 |
| | 2 | **5** | **55.56%** | 4 | **44.44%** | |
| | 3 | **7** | **77.78%** | 2 | **22.22%** | |
| | 4 | **4** | **66.67%** | 2 | **33.33%** | |
| | 5 | **2** | **100.00%** | 0 | **0.00%** | |
| **If had an abortion, did you plan to have it?** | Yes | **24** | **100.00%** | 10 | **0.00%** | **0.004** |
| | No | **27** | **71.10%** | 9 | **28.90%** | |
| **Are you aware of any woman to have successfully procured an abortion?** | Yes | **24** | **75.00%** | 8 | **25.00%** | 0.784 |
| | No | **23** | **67.65%** | 11 | **32.35%** | |
| | Not aware | **4** | **66.67%** | 2 | **33.33%** | |
| **What is the chance that you would have procured an abortion if given another opportunity?** | High | **15** | **71.43%** | 6 | **28.57%** | 0.943 |
| | Low | **36** | **70.59%** | 15 | **29.41%** | |
| **How many sexual partners do you have?** | 1 | **35** | **67.31%** | 17 | **32.69%** | 0.669 |
| | 2 | **14** | **77.78%** | 4 | **22.22%** | |
| | 3 | **1** | **100.00%** | 0 | **0.00%** | |
| | 4 | **1** | **100.00%** | 0 | **0.00%** | |

| What is your HIV status? | Negative | 29 | 61.70% | 18 | 38.30% | 0.016 |
|---|---|---|---|---|---|---|
| | Positive | 19 | 90.48% | 2 | 9.52% | |

Table 8 above shows that women who have a history of previous pregnancy are more likely to procure an abortion than those who have been pregnant before (82% vs. 31%, p<0.0001). People who have procured a previous a previous abortion are more likely to procure another abortion than those who have a miscarriage or delivery (97% vs. 80% vs. 43%, p<0.0001).

**Table 9 Factors associated with procurement of an abortion (continuous variables)**

| | | N | Mean | Std. Deviation | 95% Confidence Interval for Mean | | Minimum | Maximum | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | | | P value |
| What is your age? | Yes | 51 | 31.75 | 38.936 | 20.79 | 42.70 | 19 | 301 | 0.386 |
| | No | 21 | 24.29 | 4.808 | 22.10 | 26.47 | 18 | 36 | |
| | Total | 72 | 29.57 | 32.951 | 21.83 | 37.31 | 18 | 301 | |
| If married, at what age did you get married (in completed years) | Yes | 28 | 21.43 | 3.511 | 20.07 | 22.79 | 16 | 30 | 0.343 |
| | No | 12 | 20.33 | 2.741 | 18.59 | 22.08 | 16 | 25 | |
| | Total | 40 | 21.10 | 3.303 | 20.04 | 22.16 | 16 | 30 | |
| If yes to having children, how many children? | Yes | 25 | 2.56 | 1.294 | 2.03 | 3.09 | 1 | 5 | 0.527 |
| | No | 11 | 2.27 | 1.104 | 1.53 | 3.01 | 1 | 4 | |
| | Total | 36 | 2.47 | 1.230 | 2.06 | 2.89 | 1 | 5 | |

Table 9 above shows a comparison between those who procured an abortion against those who did not by age, age at marriage and number of children. All these factors do not seem to interfere with the decision to procure an abortion. Average of age of abortion is 32 years, not aborted 24 years, p=0.386

**Table 10 Factors associated with procurement of an abortion among HIV+ (continuous variables)**

| | | N | Mean | Std. Deviation | 95% Confidence Interval for Mean | | Minimum | Maximum | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | | | P value |
| What is your age? | Yes | 19 | 27.11 | 5.248 | 24.58 | 29.63 | 20 | 36 | 0.227 |
| | No | 2 | 32.00 | 5.657 | -18.82 | 82.82 | 28 | 36 | |
| | Total | 21 | 27.57 | 5.344 | 25.14 | 30.00 | 20 | 36 | |
| If married, at what age did you get married (in completed years) | Yes | 8 | 22.00 | 1.927 | 20.39 | 23.61 | 19 | 25 | 0.144 |
| | No | 2 | 19.00 | 4.243 | -19.12 | 57.12 | 16 | 22 | |
| | Total | 10 | 21.40 | 2.547 | 19.58 | 23.22 | 16 | 25 | |
| If yes to having children, how many children? | Yes | 10 | 2.60 | 1.430 | 1.58 | 3.62 | 1 | 5 | 0.418 |
| | No | 2 | 3.50 | .707 | -2.85 | 9.85 | 3 | 4 | |
| | Total | 12 | 2.75 | 1.357 | 1.89 | 3.61 | 1 | 5 | |

Table 10 above illustrates the continuous variables associated with the decision to procure an abortion. The average age of women who had planned to do an abortion is 27 years 24 years being the lower margin and 29 years being the upper margin.

**Table 11 Factors associated with HIV status (categorical variables)**

| | | What is your HIV status? | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | | Negative | | Positive | | |
| | | N | % | N | % | P value |
| What was your marital status at the time you were admitted? | Married | 23 | 69.7% | 10 | 30.3% | 0.799 |
| | Single | 19 | 65.5% | 10 | 34.5% | |
| | Divorced/separated | 4 | 80.0% | 1 | 20.0% | |
| | Widowed | 0 | 0.0% | 0 | 0.0% | |
| | Never married | 0 | 0.0% | 0 | 0.0% | |
| What is the highest level of schooling you have attained? | Primary | 12 | 80.0% | 3 | 20.0% | 0.443 |
| | Secondary | 23 | 67.6% | 11 | 32.4% | |
| | Vocational institute | 0 | 0.0% | 1 | 100.0% | |
| | College | 8 | 61.5% | 5 | 38.5% | |
| | University | 4 | 80.0% | 1 | 20.0% | |
| Do you work? | Yes | 30 | 71.4% | 12 | 28.6% | 0.867 |
| | No | 11 | 64.7% | 6 | 35.3% | |
| | Student | 6 | 66.7% | 3 | 33.3% | |
| If yes to work, | Gainful employment | 22 | 73.3% | 8 | 26.7% | 0.666 |
| | Self-employment | 8 | 66.7% | 4 | 33.3% | |
| What is your religion? | Catholic | 13 | 76.5% | 4 | 23.5% | 0.607 |
| | Protestant | 25 | 64.1% | 14 | 35.9% | |
| | Muslim | 4 | 66.7% | 2 | 33.3% | |
| | Hindu | 2 | 100.0% | 0 | 0.0% | |
| | SDA | 0 | 0.0% | 0 | 0.0% | |
| | Other | 2 | 100.0% | 0 | 0.0% | |
| Have you ever been pregnant before? | Yes | 33 | 62.3% | 20 | 37.7% | **0.021** |
| | No | 14 | 93.3% | 1 | 6.7% | |
| If yes to pregnancy, what was the | Abortion | 20 | 58.8% | 14 | 41.2% | 0.187 |
| | Miscarriage | 5 | 100.0% | 0 | 0.0% | |

| | | | | | | |
|---|---|---|---|---|---|---|
| outcome of the pregnancy | Delivery | 8 | 57.1% | 6 | 42.9% | |
| Do you have any children?? | Yes | 21 | 65.6% | 11 | 34.4% | 0.590 |
| | No | 23 | 71.9% | 9 | 28.1% | |
| If yes to having children, how many children? | 1 | 7 | 70.0% | 3 | 30.0% | 0.813 |
| | 2 | 7 | 77.8% | 2 | 22.2% | |
| | 3 | 5 | 62.5% | 3 | 37.5% | |
| | 4 | 3 | 50.0% | 3 | 50.0% | |
| | 5 | 1 | 50.0% | 1 | 50.0% | |
| What is your ideal number of children? | 1 | 3 | 60.0% | 2 | 40.0% | 0.919 |
| | 2 | 15 | 65.2% | 8 | 34.8% | |
| | 3 | 16 | 76.2% | 5 | 23.8% | |
| | 4 | 7 | 63.6% | 4 | 36.4% | |
| | 5 | 2 | 66.7% | 1 | 33.3% | |
| | 10 | 1 | 100.0% | 0 | 0.0% | |
| Have you ever had an abortion? | Yes | 29 | 60.4% | 19 | 39.6% | 0.016 |
| | No | 18 | 90.0% | 2 | 10.0% | |
| If yes to having an abortion, did you plan to have an abortion? | Yes | 9 | 40.9% | 13 | 59.1% | **0.002** |
| | No | 30 | 81.1% | 7 | 18.9% | |
| Are you aware of any woman to have successfully procured an abortion? | Yes | 16 | 55.2% | 13 | 44.8% | 0.100 |
| | No | 27 | 79.4% | 7 | 20.6% | |
| | Not aware | 4 | 80.0% | 1 | 20.0% | |
| What is the chance | High | 9 | 42.9% | 12 | 57.1% | **0.002** |

| | | | | | | |
|---|---|---|---|---|---|---|
| that you would have procured an abortion if given another opportunity? | Low | 38 | 80.9% | 9 | 19.1% | |
| How many sexual partners do you have? | 1 | 38 | 76.0% | 12 | 24.0% | 0.088 |
| | 2 | 8 | 50.0% | 8 | 50.0% | |
| | 3 | 1 | 100.0% | 0 | 0.0% | |
| | 4 | 0 | 0.0% | 1 | 100.0% | |

Table 11 above shows the different factors that influence a decision to do an abortion. Marital status, level of education, religion and occupation do not influence the decision to conduct an abortion. There is a significant association between having had a previous pregnancy and planning to have an abortion.

**Table 12 Multivariate Analysis**

| | Coefficient | S.E. of coefficient | P value | OR | 95% C.I. for OR | |
|---|---|---|---|---|---|---|
| | | | | | Lower | Upper |
| If yes to question being pregnant before , what was the outcome of the pregnancy | 2.141 | .644 | .001 | 8.504 | 2.407 | 30.043 |
| What is your HIV status? | -1.829 | 1.093 | .094 | .161 | .019 | 1.367 |

Women who previously procured an abortion before are 8 times likely to procure another as shown on Table 12. (OR – 8.504, 95% CI, 2.4 – 30, p = 0.001)

**Table 13 Comparison between HIV status, abortion and ever using family planning**

| | | Have you ever used family planning before? | | | | |
|---|---|---|---|---|---|---|
| | | Yes | | No | | |
| | | N | % | N | % | P value |
| Have you ever had an abortion? | Yes | 43 | 84.3% | 8 | 15.7% | 0.728 |
| | No | 17 | 81.0% | 4 | 19.0% | |
| What is your HIV status? | Negative | 38 | 80.9% | 9 | 19.1% | 0.627 |
| | Positive | 18 | 85.7% | 3 | 14.3% | |

Among the women who had ever had an abortion, 43 had used family planning before. There is no association between women who has ever had an abortion with prior utilization of family planning. There is also no association between a woman's HIV statuses with their previous utilization of family planning

# CHAPTER 5

# DISCUSSION

## *5.1    Introduction*

This chapter presents the discussion of study findings. Conclusions have been drawn and recommendations made based on the results.

## *5.2    Demographic characteristics*

Results from the study show that majority of the participants (35%) were aged between 21 and 25 years. The mean age of the study participants was 25.8 years with a standard deviation of 5.81 years. Over 80% of the participants were between 18 and 30 years. The findings of this study are in line with a survey conducted in Ghana which showed the incidence of abortion being highest among 20-24 year olds and lower in each successive age group(Sedgh, 2010.) The oldest participant was 42 years while the youngest being 18 years.

Among the demographic variables marital status, 47% of the participants were married. The mean marriage age for the married women participating in the study was 21.1 with a standard deviation of 3.3. About 68% women got married between the ages of 18 and 23. There was no significant association between marital status (p=0.692) and work for a woman to procure an abortion (p=0.158).

Most of the participants had at least attended formal education with 75% attending secondary education and above. According to Narendra (2010) the level of education and pursuit for education impacts strongly on a woman's decision to terminate a pregnancy. In this study, the level of education (p=0.528), there was no association for a woman to procure an abortion. When women take the career route they desire children less as raising the children interferes with the advancement of their careers as their social role is to be the primary caretakers of children(Narendra, 2010). Majority of the women who participated in this study had at least acquired secondary education (49%, n=72). This study shows that abortion was sought by all women irrespective of their level of education. This doesn't agree with Sedgh's study of 2010 on

abortion in Ghana that indicated that the educated women sought for abortion more than the poor uneducated women, There was an association between those women who had ever had an abortion in their previous pregnancies (p=< 0.0001) and the choice of procuring an abortion. Among the respondents, most had planned to have an abortion. (p=0.004).

Hussain in his study on unintended pregnancy and abortion in Uganda found out that wealthier women had a higher tendency of procuring an abortion since they can afford abortion services from doctors, nurses and clinical officers(Hussain, 2013). This study shows that these women procured more abortion citing economic pressure as their reason: thus the conclusion that women from low economic status procured abortion more than their wealthier counterparts.

## 5.3    *Prevalence of HIV among the patients*

Most of the respondents were HIV negative (67%), while 29% were HIV positive and 4% did not know their status.

Most of the participants in this study who were HIV positive had procured an abortion (n=19, 39.6% ) this is in line with a demographic surveillance that was conducted  in Western Kenya by Desai which showed that among women who were HIV positive 52% of them had miscarriages and/or abortions(Desai et al., 2013).

Among the women who procured abortions 59.1% ( n=13) of them planned to have these abortions, thus there is a significant association between having an aborttion previously and planning to have one among these women. (p= 0.002).

Among the HIV positive women, 75% were of the opinion that abortion procedures increase exposure risk of HIV. People who have a history of previous pregnancy are more likely to procure an abortion than those who have been pregnant before. (82% vs. 31%, p <0.0001). Therefore exposures to previous pregnancy or previous abortion are risk factors for abortion. This is in line with Chi et al study which indicated that a woman who had previously lost a pregnancy or a child previously due to HIV was likely to abort because of the torture and agonizing pain the women went through during that period(Chi et al., 2010).

Women who are HIV positive are likely to conduct an abortion than those who are HIV negative. (90% vs. 62%, p =0.016).it is also true according to this study that HIV positive patients who have had an abortion are likely to conduct an abortion than those who have had successful deliveries (100% vs. 66.7%, p= 0.023). This conclusion is in line with a study conducted in Vietnam whose results showed that HIV positive women opted for an abortion after HIV diagnosis. Thus they concluded that being diagnosed as HIV positive had an association with induced abortion(Chi et al., 2010).

## 5.4    *Reasons for taking up an abortion among HIV positive women*

The HIV status of a woman determined their choice of procuring an abortion or not. Twenty three per cent of the women gave HIV status as a reason to carry out an abortion. One particular widowed lady who was HIV positive reported that the fact that she was HIV positive, she was unhealthy and she had fear of giving birth to an unhealthy baby who would later on be orphaned after the mother died. This agrees with a study that was carried out in Vietnam on induced abortion among HIV positive women which revealed that women feared leaving their children behind after they died. (Chi et al., 2010).

Personal values came out strongly after HIV status as reasons why women procured abortions. (n=19, 16%). Some reasons that the women gave were in line with a study by Orner et al in South Africa which revealed that lack of support from male partners or families led to inadequate care for a child thus prompted some women to seek an abortion. Others did not want a child and they were also not ready to have one(Orner et al., 2011). Another personal reason the women gave was that they faced disapproval if they became pregnant in their positive HIV status, hence they sought abortions.

Some participants (22%) stated that low source of income was the reason they opted to abort. This results correlates to the findings of Sedgh (2010). Sedgh in his cross-sectional study on abortion in Ghana found that the most common reasons why women sought for abortion was low finances for taking care of their children.

Twenty percent of the women alluded to personal reasons to abort. Majority stated that social pressure played a role in their abortion decision some said that the desire to delay child bearing. This is in line with Sedgh study of abortion in Ghana(Sedgh, 2010).

WLHIV cited stigma and disapproval from family as a personal decision to procure an abortion. This study agrees with a study conducted in South Africa which showed that WLHIV were not to receive support from their partners and family in seeking an abortion(Orner et al., 2011).

## 5.5    *Uptake of Family Planning before the abortion among HIV positive women*

Uptake of family planning among the participants was 99%. Only one woman stated that she was not using family planning method as she was not aware of family planning methods. Eighty three percent of the women had used family planning before they got pregnant.33% stopped using the method because they wanted to get pregnant and 30% because of their own choice.

Of all the family planning methods, injectable were the most used at 34% among those negative and 33% among those positive. The second most common method of contraception was condoms (22.2%, n=19). There was no association between HIV status and previous family planning method use. (p=0.557). This is slightly different from a study in Northern Nigeria on correlates of fertility intentions among HIV/AIDs patients where the most commonly used family planning method was combined oral contraceptives before HIV diagnosis. After diagnosis with HIV  the male condoms is used more.(Iliyasu et al., 2009)**.** In the same study being HIV positive, modified but did not remove reproductive desires(Iliyasu et al., 2009)**.** In this study, both HIV seronegative and seropositive women have similar reproductive choices (80.9% vs. 85.7%, p=0.627). However the HIV positive women's family life choices were influenced and shaped by their serostatus.

## 5.6    *Hypothesis testing*

There is a no significant association between abortion, level of education, marital status and HIV seropositive status among women in Kenyatta National Hospital (90% vs. 62%, p=0.016). We fail to reject the null hypothesis and conclude that the HIV status influences a woman's decision to procure an abortion.

# CHAPTER 6

# CONCLUSION AND RECOMMENDATIONS

## *6.1    Conclusion*

This study provides valuable information on the reasons why women procure abortion. Low economic status, HIV status and personal reason came top of the reasons of abortion. Therefore the study concludes that HIV seropositive status highly influences a woman's decision to procure an abortion. (90% vs. 62%, p=0.016). People who previously procured an abortion before are 8 times likely to procure another. (OR – 8.504, 95% CI, 2.4 – 30, p = 0.001)

## *6.2    Recommendations*

The results of this study show that the most compelling reason for undertaking an abortion was the women's HIV status, personal, social, economic pressures, lack of partner support and health related reasons. Based on these reasons to procure abortions, health workers in the different departments that provide health care services to these and other women should participate in reducing the high rates of abortion by implementing the following recommendations.

1. Health education on contraception should be emphasized more. This should begin at an early age as the findings of the study reveal abortion is more among younger ages; this will enable women make informed decisions regarding their reproductive issues in all health facilities.

2. Counseling on HIV and pregnancy should be emphasized by encouraging women to utilize and adhere to PMTCT services.

3. Safe and legal abortion procedures should be emphasized.

4. Advise on family planning and counseling to both HIV positive and HIV negative clients.

5. Enhance sensitization on the importance of contraceptive use among women of reproductive age.

6. More evidence based research on correlates of HIV/AIDs and reproductive health to be encouraged.

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# APPENDICES

# APPENDIX I: CONSENT FORM AND INFORMATION

I am Diana Wangeshi a second year post graduate student at the University of Nairobi, College of Health Sciences pursuing a master's degree in Medical Surgical Nursing.

Dear participants,

My aim is to carry out a study on **"correlates of abortion, level of education, marital status and HIV seropositive status in Kenyatta National Hospital"**, as part of the requirements for the award of a master's degree in Medical surgical Nursing.

I kindly request you to participate in this study by filling this questionnaire. You are assured that the information you provide will be kept confidential and anonymous and used only for the purpose of investigating this topic. You are therefore not required to write any of your personal particulars on the questionnaire. No harm or pain will be inflicted on you during this process. There are no direct incentives however; the results of the study will be used to improve access to contraceptive services to reduce unintended pregnancy and the need for abortion. In case you don't want to participate or feel like withdrawing from the study at any time you will not be victimized. Your participation in the study is therefore voluntary but highly appreciated and very important for the success of this study.

In case of any questions, you are free to contact the principal researcher by phone on 0721717031, email dwangeshi@gmail.com as well as the secretary to the ethics and research committee Professor A.N Guantai and my supervisors,

Thank you.

Diana Wangeshi (Principal Researcher)

Client consent form signature

I..................................................................., have read the consent explanation and have understood and do voluntarily agree to participate in the study.

Signature of participant                               ................................            Date................

Researcher/Research Assistant's signature.........................        Date.................

# APPENDIX II: THE STUDY TOOL

## *Questionnaire*

**Study Topic:** Correlates of abortion and HIV seropositive status in Kenyatta National Hospital

**Instructions: This questionnaire has 5 sections. Kindly give your answers as guided by the question by ticking in the appropriate box or commenting on the space left to the right of the relevant question.**

**Section 1: Demographic Data**

1. What is your age? …………………………………………

2. What was your marital status at the time you were admitted?

   i) Married **[ ]**          ii) Single **[ ]**          iii) Divorced/Separated **[ ]**

   iv) Widowed **[ ]**          **v)** Never married [ ]

3. If married, at what age did you get married (in completed years) ⸏⸏⸏⸏⸏⸏⸏⸏⸏⸏⸏⸏⸏

4. Where were you residing leading up to your admission in this hospital? …………….

5. What is the highest level of schooling you have attained?

   i) Primary **[ ]**                    iv) College **[ ]**

   ii) Secondary **[ ]**                    v) University **[ ]**

   iii) Vocational Institute [ ]          vi) Never went to school [ ]

   vii) Other............................

**Section 2: Socio –economic factors**

6. Do you work?   i)Yes [ ]          ii)No   [ ]               iii) Student [

7. If yes in 6,

   i) Gainful employment [ ]                ii) Self-employed [ ]

**Section 3: Socio- cultural factors**

8. What is your religion?

   i) Catholic         [ ]                        ii) Protestant [ ]            iii) Muslim [ ]

    iv) Hindu [ ]                    iv) SDA        [ ]                v) other [ ]

   Specify ......................................................

9. Have you ever been pregnant before?

   i) Yes      [ ]                                        ii) No  [ ]

10. If yes to question 9 above , what was the outcome of the pregnancy

    i) Abortion [ ]      ii) Miscarriage [ ]      iii) Delivery  [ ]

11. Do you have any children?

    i) Yes [ ]                                    ii) No  [ ]

12. If      yes      to      question      11,      how      many      children?
    ………………………………………….

13. If   you   have   been   pregnant   before,   how   long   is   it   between   your   last
    pregnancy/abortion and this pregnancy?

    i) Year(s) ……….............          ii) Month(s) …………………

14. What is your ideal number of children?....................................................

15. Have you ever had an abortion?

    i) Yes **[  ]**                                    ii) No **[  ]**

16. If yes in 15, did you plan to have an abortion?

    i) Yes **[  ]**                                    ii) No **[  ]**

17. Are you aware of any woman to have successfully procured an abortion?

    i) Yes **[  ]**                ii) No **[  ]**                iii) Not aware **[  ]**

18. If yes in 17, what is your relation to this woman?

    i) Friend [  ]                                    ii) Relative [  ]

    iii) Acquaintance [  ]                            iv) Colleague [  ]      Other...............

19. What is the chance that you would have procured an abortion if given another opportunity?

    i) High **[  ]**                        ii) Low **[  ]**

    **Section 4 knowledge about HIV/AIDs**

20. How many sexual partners do you have? .........................................................
21. Have you ever heard about Voluntary Testing and Counselling for HIV/AIDs?

    i) Yes     [  ]                                    ii) No [  ]

    iii) No response [  ]

22. Have you ever had a test for HIV?

   i) Yes     [  ]                                    ii) No [  ]

   iii) Don't know [  ]                               iv) No response [  ]

23. If yes in 22 above, when was the last time?

   i) Within the last 6 months [  ]          ii) within the last 1 year [  ]

   iii) 2 – 5 years ago [  ]                       iv) Don't know [  ]

   v) No response [  ]

24. Did you receive results of your last test?

   i) Yes [  ]                                        ii) No [  ]

   iii) Don't know   [  ]                             iv) No response [  ]

25. What is your HIV status?

   i) Negative [  ]                                   ii) Positive   [  ]

   iii) Don't know [  ]                               iv) No response   [  ]

26. Do you think abortion procedures undergone increase exposure risk of HIV?

   i.) Yes **[  ]**                                   ii) No **[  ]**

27. What is (are) the most compelling reason(s) from the list below that led the choices
   you made on abortion? (Tick all those you feel compelling to you)

   i) Personal values **[  ]**                        ii) Social pressure **[  ]**

   iii) Economic pressure **[  ]**                    iv) Cultural pressure **[  ]**

v) HIV status **[  ]**                                    vi) other **[  ]**

 Specify ................................................................................................................................

................................................................................................................................

28. Did your personal values play a role in the abortion decision?

   i) Yes [  ]                    ii) No [  ]

29. Did social pressure play a role in the abortion decision?

   i) Yes [  ]                    ii) No [  ]

30. Did your cultural play a role as a reason for the abortion decision?

   i) Yes [  ]                    ii) No [  ]

31. Does HIV status contribute to a woman undergoing an abortion?

   i) Yes [  ]                    ii) No [  ]

### Section 5: health promotion practices

32.    Are you aware of any family planning methods?    i) Yes **[  ]**              ii) No **[  ]**

33.    Which family planning methods are you aware of?( tick as many )

| Pills | | Intrauterine contraceptive device (IUCD) | |
|---|---|---|---|
| Natural methods | | Implants | |
| Male and female condoms | | Tubal ligation | |
| Injectable contraceptives | | Emergency pill | |

34.    Have you ever used family planning before?

   i) Yes [  ]                    ii) No [  ]

35.    What method were you using before you got pregnant? ................................................

36. How long did you use the method? ..............................................................

37. Why did you stop using the method?(tick as many)

| | | | |
|---|---|---|---|
| Infrequent sex | | Method failed | |
| Wanted to get pregnant | | Lack of sex urge | |
| Menstrual problems | | Health problems | |
| Unavailability | | Weight gain | |
| Expensive | | Lack of spouse support | |
| Weight loss | | Other | |
| Own choice | | | |

38. Are these family planning methods available?

   i) Yes [  ]                    ii) No [  ]

39. Are you able to access family planning methods with ease?

   i) Yes [  ]                         ii)No[  ]

## END-THANK YOU

# APPENDIX III: HEALTH EDUCATION GUIDE

1. Family planning Family planning methods are to help make an informed decision. The choice of one method of contraception against the other depends on individual medical condition and the taste of an individual or partner. Type of family planning methods.

   - Natural methods known as natural because they do not involve use of drug or devices. They are purely natural. They include withdrawal method, Safe period and Lactation amenorrhea.

   - Intrauterine device – involves use of devices made of small flexible copper or plastic placed in the uterus, forming a barrier. Most have 1 or 2 strings that hang from the cervix into the vagina.

   - Condoms – available in male and female forms. - effective to prevent pregnancy and STIs. Act as mechanical barriers.

   - Hormonal methods - they include pills, injectable and implants. This act by preventing development and maturation of the ovum.

   - Surgical methods – usually most reliable. These include tubal ligation and vasectomy. Both methods are permanent.

2. HIV/STI risk, transmission and prevention. Assess knowledge of HIV status, safe and protected sex, knowledge of sexual partners and their sexual practices, type of sexual activities and behaviors. Symptoms and treatment of STIs for both self and partners. Use of PMTCT services during pregnancy, delivery and breastfeeding.

# APPENDIX IV: AUTHORITY LETTERS
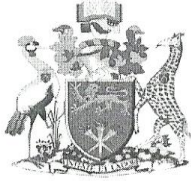
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Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/84          Link:www.uonbi.ac.ke/activities/KNHUoN          3rd April   2014

Diana Wangeshi Njuguna
School of Nursing Sciences
College of Health Sciences
University of Nairobi

Dear  Diana

Research proposal; Correlates of Abortion and HIV Seropositive status in Kenyatta
National Hospital  (P45/01/2014)

This is to inform you that the KNH/UoN-Ethics & Research Committee (KNH/UoN-ERC) has reviewed
and **approved** your above proposal.  The approval periods are  3rd April 2014 to 2nd  April  2015.

This approval is subject to compliance with the following requirements:

a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH/UoN
   ERC before implementation.
c) Death and life threatening problems and severe adverse events (SAEs) or unexpected adverse events
   whether related or unreal+ted to the study must be reported to the KNH/UoN ERC within 72 hours of
   notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study
   participants and others or affect the integrity of the research must be reported to KNH/UoN ERC within 72
   hours.
e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period.
   (*Attach a comprehensive progress report to support the renewal*).
f) Clearance for export of biological specimens must be obtained from KNH/UoN-Ethics & Research
   Committee for each batch of shipment.
g) Submission of  an *executive summary* report within 90 days upon completion of the study
   This information will form part of the data base that will be consulted in future when processing related
   research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH/UoN ERC website **www.uonbi.ac.ke/activities/KNHUoN.**

Protect to Discover

60

Yours sincerely

PROF. M. L. CHINDIA
SECRETARY,    KNH/UON-ERC

c.c.    The Chairperson, KNH/UoN-ERC
        The Deputy Director CS, KNH
        The Principal, College of Health Sciences, UoN
        The Director, School of Nursing Sciences, UoN
        The Assistant Director, Health Information, KNH
        Supervisors:  Mr. Anthony Ayieko Ong'any, Prof. Grace Omoni

Protect to Discover

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Research &Programs: Ext. 44705
Email: k.research@knh.or.ke

# Study Registration Certificate

1. Name of the PI ...Diana  Wangeshi  Njuguna.........................................................

2. Email address: ......dwangeshi@gmail.com............ Tel No. ....0721717031..................

3. Contact person (if different from PI)....................................................................

4. Email address: ........................................... Tel No. ......................................

5. Study Title
   .....Correlates  of  Abortion  and  HIV Sero Seropositive  status  in  Kenyatta.....
   .....National  Hospital................................................................................
   ......................................................................................................

6. Department where the study will be conducted .......Reproductive  Health  Dept...........

7. Endorsed by Head of Department where study conducted
   Name: ..Dr  John  Ongech...Signature..............  Date...11-4-2014....

8. KNH UoN Ethics Research Committee approval number ____P45/01/2014____
   *(Please attach copy of ERC approval)*

9. I ____Diana  Wangeshi  Njuguna_____ commit to submit a report of my study
   findings to the Department where the study will be conducted and to the Department of Research
   and Programs.

   Signature............Dhana........ Date......9.04.2014..................................

10. Study Registration number (Dept/Number/Year)..OBS/GYN.../015 /2014
    (To be completed by Research and Programs Department)

11. Research and Program Stamp_____

    KENYATTA NATIONAL HOSPITAL
    H.O.D.
    RESEARCH & PROGRAMS
    1 4 APR 2014
    Box 20723 NAIROBI

All studies conducted at Kenyatta National Hospital **must** be registered with the Department of
Research and Programs and investigators **must commit** to share results with the hospital.

# MINISTRY OF HEALTH

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Our Ref: MS/VOL.1/2013/14

Mbagathi District Hospital
P.O. Box 20725- 00202
Nairobi

3rd April 2014

**Diana Wangeshi Njuguna**
**School of Nursing Sciences**
**College of Health Sciences**
**University of Nairobi**

Dear Madam,

<u>**RE: RESEARCH AUTHORIZATION**</u>

This is in reference to your application for authority to carry out a research on *"Correlates of abortion and HIV Seropositive status in Kenyatta National Hospital – pretest in Mbagathi District Hospital*

I am pleased to inform you that your request to undertake the research in the hospital has been granted.

On completion of the research you are expected to submit one hard copy and one soft copy of the research report / thesis to this office.

2 3 APR 2014

**Dr. J. Mwagiru**
**Secretary – Research Committee**
<u>**Mbagathi District Hospital**</u>