

**THE EFFECTS OF ANTENATAL HEALTH EDUCATION ON POSTNATAL CARE  
AMONG HIV POSITIVE WOMEN IN FRANCISTOWN CITY, BOTSWANA**

by

**STEMBILE MATAMBO**

submitted in accordance of the requirements

for the degree of

**MASTER OF ARTS**

in the subject

**HEALTH STUDIES**

at the

**UNIVERSITY OF SOUTH AFRICA**

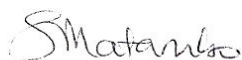
SUPERVISOR: DR JM MATHIBE-NEKE

NOVEMBER 2014

**Student number: 46843639**

**DECLARATION**

I declare that **THE EFFECT OF ANTENATAL HEALTH EDUCATION ON POSTNATAL CARE AMONG HIV POSITIVE WOMEN IN FRANCISTOWN CITY, BOTSWANA** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.



**STEMBILE MATAMBO**

**Full name**

4 December 2014

**DATE**

## **THE EFFECTS OF ANTENATAL HEALTH EDUCATION ON POSTNATAL CARE AMONG HIV POSITIVE WOMEN IN FRANCISTOWN CITY, BOTSWANA**

STUDENT NUMBER: 46843639  
STUDENT NAME: STEMBILE MATAMBO  
DEGREE: MASTER OF ARTS  
DEPARTMENT: HEALTH STUDIES  
SUPERVISOR: DR JM MATHIBE-NEKE

### **ABSTRACT**

The purpose of the study was to determine the effect of antenatal health education on postnatal care (PNC) among Human Immunodeficiency Virus (HIV) positive women in Francistown city, Botswana. This study followed a quantitative research paradigm. Data was collected with the aid of a questionnaire from eligible women who consented in writing to participate in the study.

Forty-five percent (45%) (n=45) HIV positive women came with babies for 6 weeks PNC and 55% (n=55) brought 8 weeks old babies either for weighing or for the two months immunisation from 28 April to 10 June 2014.

The responses regarding the source of health education received were as follows: 40% lay counselors, 31% midwives, 15% doctors, 5% nurses without midwifery, 5% cadre unknown, 2% both lay counselors and midwives, 1% by a health education assistant and 1% was not health educated at all.

Conclusion: The study revealed that HIV positive pregnant women received health education from different cadres of health and mostly by lay counselors. Literature indicates that lay counselors may give health information but at a very superficial level.

### **Key concepts**

Acquired Immune Deficiency Syndrome (AIDS); antenatal health education; effect; HIV positive women; postnatal care (PNC).

## ACKNOWLEDGEMENTS

I wish to sincerely acknowledge the following:

- God Almighty who gave me the strength and a renewed mind that drove me to achieve my learning goals
- My dear husband Charles who saw my academic potential and encouraged me to study
- My wonderful children Michael, Lina, Yvonne, Tawanda and my two grandchildren who motivated me to be an example to them
- My two spiritual daughters who helped with editing; Chamada Phuti and Phemelo Masilo
- My faculty advisors Dr MB Monyemore and Dr Mathibe-Neke who gave me direction through my Master's degree studies
- My supervisors at work who paved a way through guiding me during work related research and report writing
- My two mentors, Mrs Unami Mathebula and Mr Blessing Mandizha who believed that I would make it
- My colleagues at work Chipso and Mmapula who were of great support during data collection
- Francistown district health management team for allowing me to undertake the study in their district
- The nurses in-charge of Lapologang and Masego clinic and their staff who exhibited wonderful interpersonal relationships during the study
- Finally the participants who were willing to share their experiences on health education obtained during antenatal care
- I dedicate this work to my late dad, Wallace and my mother Margaret who taught us that the sky in learning is the limit

## Table of Contents

CHAPTER 1 .....	1
OVERVIEW OF THE STUDY .....	1
1.1 INTRODUCTION .....	1
1.2 THE BACKGROUND OF THE STUDY .....	1
1.3 STATEMENT OF THE RESEARCH PROBLEM .....	4
1.4 PURPOSE OF THE STUDY .....	4
1.5 RESEARCH QUESTIONS .....	5
1.6 OBJECTIVES OF THE STUDY .....	5
1.7 DEFINITION OF CONCEPTS .....	5
1.8 METHODOLOGY .....	7
1.9 SIGNIFICANCE OF THE STUDY .....	8
1.10 SCOPE AND LIMITATION OF THE STUDY .....	8
1.12 CHAPTER DIVISION .....	8
1.13 CONCLUSION .....	9
CHAPTER 2 .....	10
LITERATURE REVIEW .....	10
2.1 INTRODUCTION .....	10
2.2 LITERATURE SEARCH .....	10
2.3 INTERNATIONAL LITERATURE ON ANTENATAL AND POSTNATAL HEALTH EDUCATION .....	11
2.4 LITERATURE REVIEW ON BOTSWANA .....	13
2.5 CONCLUSION .....	13
CHAPTER 3 .....	14
METHODOLOGY .....	14
3.1 INTRODUCTION .....	14
3.2 RESEARCH DESIGN .....	14
3.2.1 Research methods .....	14
3.2.2 Setting .....	15
3.2.3 Population and sample selection .....	15
3.3 INCLUSION/EXCLUSION CRITERION .....	15
3.3.1 Sample frame .....	16
3.3.2 Accessible population .....	16

3.4	DATA COLLECTION .....	16
3.4.1	Pilot study .....	17
3.4.2	Data collection process .....	17
3.4.2.1	Primary data .....	17
3.4.2.2	Secondary data .....	18
3.4.3	Validity and reliability .....	18
3.4.3.1	Internal validity .....	19
3.4.3.2	External validity .....	19
3.4.4	Reliability .....	20
3.5	DATA ANALYSIS .....	20
3.6	ETHICAL CONSIDERATIONS .....	21
3.6.1	The respondents .....	21
3.6.2	The institution .....	22
3.6.3	Researcher .....	23
3.6.4	Ethics pertinent to the topic .....	23
3.7	CONCLUSION .....	23
	CHAPTER 4.....	24
	DATA ANALYSIS AND INTERPRETATION OF FINDINGS.....	24
4.1	INTRODUCTION .....	24
4.2	THE PURPOSE OF THE STUDY .....	24
4.2.1	Objectives of the study .....	24
4.3	AN OVERVIEW OF RESULTS.....	24
4.3.1	Biographical data.....	25
4.3.1.1	Respondent's age .....	25
4.3.1.2	Marital status .....	26
4.3.1.3	Religion .....	27
4.3.1.4	Accommodation.....	29
4.3.1.5	Educational level .....	29
4.3.1.6	Employment status.....	30
4.3.2	Number of pregnancies .....	31
4.3.3	Knowledge of HIV positive status .....	31
4.3.4	Frequency distribution for the parity of women.....	32
4.3.5	Women given antenatal health education .....	33

4.3.6	ANC health education in Botswana.....	34
4.3.7	Hypothesis testing.....	37
4.4	CONCLUSION .....	39
CHAPTER 5.....		40
SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS.....		40
5.1	INTRODUCTION.....	40
5.2	PURPOSE AND AIM OF THE STUDY.....	40
5.3	STUDY METHODS .....	41
5.4	CONCLUSION BASED ON THE STUDY OBJECTIVES .....	41
5.5	BRIEF SUMMARY OF THE STUDY .....	42
5.5.1	Conclusion.....	43
5.6	LIMITATIONS OF THE STUDY.....	43
5.7	RECOMMENDATIONS FOR PRACTICE .....	44
5.8	RECOMMENDATIONS FOR FURTHER RESEARCH .....	44
5.9	CONCLUSION .....	45
LIST OF REFERENCES.....		46

**LIST OF TABLES**

Table 4.1	Association of education level, accommodation and marital status .....	29
Table 4.2	Frequency distribution for the parity of women (N=100) .....	33
Table 4.3	Questionnaire responses .....	35



**LIST OF FIGURES**

Figure 4.1	Respondents' age (N=100).....	26
Figure 4.2	Participants' marital status (N=100).....	27
Figure 4.3	Participants' religious background (N=100).....	28
Figure 4.4	Employment status of HIV positive postnatal women in the study (N=100) ..	30
Figure 4.5	Number of pregnancies and term babies born to women in the study period (Francistown, Botswana 2014) (N=100) .....	31
Figure 4.6	Knowledge of HIV positive women/period knowing HIV positive status (N=100).....	32
Figure 4.7	Women given antenatal health education (N=100) .....	34

**ABBREVIATIONS AND ACRONYMS**

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
DHMT	District Health Management Team
DNA	Deoxy Ribo Nucleic Acid
HAART	Highly Active Antiretroviral
HIV	Human Immunodeficiency Virus
HRDC	Health Research and Development Division (Council)
PCR	Polymerase Chain Reaction
PNC	Postnatal Care
UNFPA	United Nations Population Fund
UNISA	University of South Africa
WHO	World Health Organization

## **LIST OF ANNEXURES**

Annexure A	UNISA Ethical clearance certificate
Annexure B	HRDC Botswana approved study permit
Annexure C	Francistown DHT permission to conduct study
Annexure D	Questionnaire
Annexure E	Informed consent form

# **CHAPTER 1**

## **OVERVIEW OF THE STUDY**

### **1.1 INTRODUCTION**

Chapter 1 presents the background information which highlight the rationale for the study, motivation for the study, statement of the research problem, purpose and objectives of the study, definition of concepts, research question, an overview of the research methodology, an outline of chapters, the significance of the study, the scope and limitation of the study and the conclusion for the chapter.

### **1.2 THE BACKGROUND OF THE STUDY**

Botswana has a population of 2 024 904 and Francistown, the second largest city in the country, has a population of 100 079. The study was carried out in Francistown. Health education is defined by the World Health Organization (WHO) as any combination of learning experiences designed to help individuals and communities to improve their health by increasing their knowledge or influencing their attitudes. This education is given to individuals, families and communities (WHO 2013:1). Health education requires participation of the target group for it to be sustained. Antenatal health education within the context of this study, includes a combination of learning experiences offered to pregnant women to increase their knowledge and equip them to make positive informed decisions during antenatal period, throughout labour and delivery and during the postnatal period. In most cases, according to the Botswana National Guidelines on Prevention of Mother-to-Child-Transmission (Ministry of Health (Botswana) 2011:8). HIV positive women are mostly diagnosed during the antenatal (ANC) period as all pregnant women are offered HIV voluntary counseling and testing. Warren, Daly, Taure and Mongi (2006:80) state that there is a greater risk for maternal mortality among HIV positive women than HIV negative women. AIDS info (2012) states that women who are HIV positive have additional health education needs that include, CD4 count, additional education on antiretroviral therapy for mother and baby, HIV tests for the baby, referral

to support groups and stakeholders, feeding methods for the baby, general hygiene and nutrition for the mother.

Postnatal care (PNC) means the care offered to the mother and baby six weeks following childbirth in the maternity unit, primary health care setting or home based. Postpartum care encompasses management of the mother, newborn and infant during the postnatal period. "This period usually considered being the first few days after delivery, but technically it includes the six-week period after childbirth up to the mother's postpartum checkup with her health care provider". It involves keeping delivered babies for at least 24 hours, timely home visits from day 2 of delivery and attendance for PNC at a health care facility at 6 weeks post-delivery (Jacobson 2002:2).

The health care workers besides rendering care already mentioned above provide information which promotes vaccination and birth registration. During home visits, the health care workers also collaborate with community health workers who could be providing extended PNC at home. It is important therefore to establish functional referral systems between home and the health care facilities. PNC extent to the provision of health information to promote healthy behaviour and promote exclusive feeding methods which could either be formula feeding or breastfeeding. The information includes the importance of ensuring that the baby is kept in a warm environment. The mother is provided with health information on diet, rest, sleep, supportive systems, family planning, sex after delivery, identification of illnesses for example pneumonia in the baby so that the baby can be treated timeously. The mother is also taught to identify danger signs for her and her newborn baby. Postnatal health information re-enforces the antenatal health education that was given during ANC.

Demographic and health surveys conducted between 1999 and 2004 have shown that four in ten women who had live births in five years preceding the survey had not received any postnatal care in the first two days of delivery. The UN Millennium Project (2005) revealed that there is substantial evidence that prove that the use of maternal care services is closely linked to economic status. Analysis of existing data in different countries showed that the wealthy have more access to maternal health services than the poor (Gwartkin et al 2005; Ronsman & Graham 2006; Stanton et al 2007). Fort et al (2006) found out that one quarter of the women from the wealthiest households were

four times more likely to receive post-partum care than the poor. This is also relevantly true of the findings of this study. The respondents were not wealthy but generally those with high school education attended postnatal care.

A study by Bhartia and Cleveland (1995) showed that there is a positive connection between higher education and postnatal attendance. It was proven in some studies that women who have secondary education or higher are more independent to demand services. Those who had primary education were more inclined to seek antenatal care than postnatal services. In Characteristics of an effective health education curriculum by The Centers for Disease Control and Prevention (2013b), it is stated that health education must be goal oriented and have behavioural outcomes. This means that if HIV positive women are effectively health educated during the antenatal period, they must exhibit positive outcomes among them attending postnatal care clinics.

According to a research on Antenatal care: meeting consumer needs ... undertaken by Svensson (2005) in Sydney Australia, some of the participants questioned the skills and facilitation of learning programs on antenatal and postnatal care that the health educators had. The research recommended that it is vital for health care workers to be trained and mentored. They concluded that effective and high quality antenatal education that was facilitated by skilled trained educators could produce superior postnatal outcomes.

According to Warren et al (2006:80), in Opportunities for Africa's Newborns, an estimated 1.16 million African babies die in the first 28 days of life and 850 000 do not live to exceed the week they were born. 51% of all these deaths occur in the Sub-Saharan region of which Botswana is one of them.

In Botswana, the Ministry of Health National guidelines on Prevention of Mother-to-Child transmission of HIV states that 95% of women seek antenatal care where they are health educated by Midwives, Lay Counselors, Medical doctors and other cadres. Pregnant women are encouraged to attend antenatal care from fourteen weeks of gestation (Ministry of Health (Botswana) 2011). According to The Ministry of Health Botswana policy guidelines, all pregnant women are offered HIV testing during their first visit to the clinic (Ministry of Health (Botswana) 2004:35). According to the Ministry of

Health (Botswana) (2007), those who are HIV positive receive the usual health education plus health information related to their HIV positive status. The antenatal education is supposed to prepare them for pregnancy, labour and delivery and postnatal care.

This study showed the outcomes of postnatal care given the services and service providers who render antenatal health education.

### **1.3 STATEMENT OF THE RESEARCH PROBLEM**

In view of the risks facing HIV positive women during PNC, there is a need to determine the effect of antenatal health education on PNC among HIV positive women. The risks facing HIV positive women during the postnatal period include; poor wound healing due to compromised immunity, cervical changes which can lead to cancer of the cervix and haemorrhage due to HIV-related thrombocytopenia (Warren et al 2006:80). The mother may develop anaemia due to HIV-related illnesses, chronic diseases, malnutrition and wasting. Hormonal contraceptives may cause drug-to-drug reactions with anti-retroviral medications and intra uterine contraceptive devices may contribute to infections. HIV positive women who choose to breastfeed face the risk of transmitting the HIV virus to the baby if they are not taking anti-retroviral treatment or prophylaxis (Warren et al 2006:81). This study was motivated by an average of 55% postnatal attendance noted during clinic audits in Francistown health facilities from 2008-2012. This finding implied that 45% of women who were HIV positive did not report for PNC. This means that both the mothers and the babies were at risk of developing complications and that babies were likely not to have had a PCR HIV test which is necessary for early initiation of ARVs if the baby is HIV positive.

### **1.4 PURPOSE OF THE STUDY**

The purpose of this study was to determine the effect of antenatal health education on PNC among HIV positive women.

## 1.5 RESEARCH QUESTIONS

The research questions for this study were:

- What health information do HIV positive women receive during the antenatal period?
- What effect does antenatal health education received by HIV positive pregnant women have on PNC?
- What aspects of antenatal health education can be recommended to ensure comprehensive health education for HIV positive pregnant women?

## 1.6 OBJECTIVES OF THE STUDY

This study aimed to

- describe the health education that HIV positive women who attended postnatal clinics, received during the antenatal period
- determine the effect of the antenatal health education given to HIV positive women
- recommend aspects to be included in the antenatal health education for HIV positive women to ensure comprehensive health education

## 1.7 DEFINITION OF CONCEPTS

- **Effect**

*The Free Dictionary* (2009:1) defines effect as something brought about by a result or the power to produce an outcome, achieve a result or have an influence.



### *Operational definition*

Effect in this study refers to an outcome or influence that health information given during ANC have on postnatal attendance among HIV positive women.

- **Antenatal health education**

Health education is defined by WHO (2013:1) as any combination of learning experiences designed to help Individuals and communities improve their health by increasing their knowledge or influencing their attitudes.

### *Operational definition*

Health information that is given during pregnancy to prepare women to make informed decisions that have positive medical outcomes and result in optimum health for both mother and the baby is referred to as antenatal health education in this study.

- **Human Immunodeficiency Virus (HIV)**

HIV is infection with the Human Immunodeficiency Virus (HIV) which leads to progressive destruction of the human immune system (*Encyclopaedia of Global Health* 2008). An HIV positive woman therefore is a woman who is infected by the HIV.

- **HIV positive pregnant woman**

A pregnant woman who is infected by the HIV virus (*Encyclopaedia of Global Health* 2008).

- **Antenatal care**

The *Bailliere's Midwives Dictionary* (2012) defines ANC as the bio-psycho-social care provided during pregnancy by midwives and obstetricians to ensure satisfactory fetal and maternal health, enable early detection and treatment of any deviation from normal. The ANC period covers pregnancy to delivery i.e. conception to birth of the baby.

### *Operational definition*

Pregnant women are examined to determine that both the mother and the baby are healthy and to prepare for a safe delivery. Postnatal women are therefore assumed to be knowledgeable since they would have received antenatal health education.

- **Postnatal care**

The *Dictionary of Medical Terms* (2008) defines PNC as care given to a woman and her baby after the birth of her child. The postnatal period covers the first six weeks of a baby's life.

### *Operational definition*

In this study, the postnatal period is from birth to 6 weeks post-delivery. Women who delivered are provided with services that ensure optimum health for them and their babies during this period and onwards. These are women from which data were collected by use of a researcher administered questionnaire.

## **1.8 METHODOLOGY**

This study followed a quantitative research paradigm. Quantitative research is concerned with measuring attributes and relationships in a population (Polit & Beck 2008:15, 729). In this regard, the effect of the antenatal health education and its relationship with PNC among HIV positive women is described in chapter 3 which is covering methodology. The research methods include population universum, inclusion/exclusion criterion, the target population and the sample frame. The accessible population sample is outlined including the sample size, sampling methods, samples obtained per clinic during data gathering and design of questionnaires. Data analysis is outlined in chapter 3.

## **1.9 SIGNIFICANCE OF THE STUDY**

This research impacts on nursing practice in that it addresses a clinical concern and generates results to significantly improve nursing practice through health education. The health care human resource, the community and society at large will benefit from this study. HIV positive women who access PNC services will have optimum health for themselves and their babies. This will result in the reduction of maternal and child morbidity and mortality rates in Botswana and eventually internationally.

## **1.10 SCOPE AND LIMITATION OF THE STUDY**

The limitations that were experienced in the study were that during data collection, the parity of the women confounded the knowledge that a woman coming to PNC with a first baby had compared to one who had more than one baby. Women who had more than one baby had more information than those who had a first pregnancy. This came about because those with more than one baby had been offered health education during previous pregnancies.

## **1.11 ETHICAL CONSIDERATIONS**

Ethical clearance to conduct the study was obtained from the University of South Africa and from the Health Research Committee (Annexure A). Participation in the study was voluntary. Ethical aspects pertaining to the study will be discussed in detail in chapter 3.

## **1.12 CHAPTER DIVISION**

The chapters following chapter 1, are chapter 2 (literature review), chapter 3 (research methodology), chapter 4 (data analysis) and chapter 5 (results, limitations and conclusions and recommendations).

### **1.13 CONCLUSION**

In this chapter, the introduction, background information and the problem statement have been outlined. The purpose and the objectives of the study were explained. Research methods, analysis, results, scope and limitations, chapter division and the significance of the study were outlined. The next chapter discusses literature review related to the study.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

Chapter 2 presents the literature review which is explained by Charmers as a process of taking stock of existing knowledge in order to make informed choices about the focus of the study (Joubert, Ehrlich, Katzenellenbogen & Abdool Karim 2007:66). The researcher does not simply make summaries of reports but makes an in-depth study to evaluate what has already been studied and the findings therefore. Literature review also helps to identify any strengths and weaknesses of the present study. The literature review will also help put the new results into context and help direct further studies related to this topic.

#### **2.2 LITERATURE SEARCH**

Several searches were made on the study topic using the PubMed, Medline and the Cochrane search engines. Eleven relevant topics were identified using the words antenatal health education in HIV/AIDS in PubMed. Only one article titled, "Awareness and attitude of antenatal clients towards HIV voluntary testing and counseling in Amim, Keno Teaching Hospital, Kano, Nigeria" reported by Lliyasu, Kabir and Galadanci (2005:7-32) was relevant to the current study. The majority of the participants had some knowledge of HIV/AIDS. Six percent of the participants disapproved of voluntary counseling and testing for HIV. The authors concluded that there is a need to intensify health education to convince the minority six percent of the benefits of voluntary counseling and testing for HIV.

The Medline search engine gave five reports on antenatal health education in general. There were no reports specifically including information relevant to HIV positive women. Only one Cochrane report, "Patient support and education for promoting adherence to Highly Active Antiretroviral (HAART) for HIV/AIDS" was found. This report is from a

study that was published by Ruedo, Park, Wyllie, Bayoumi, Tynan, Antoniou, Rourke and Glazer (2009:1).

### **2.3 INTERNATIONAL LITERATURE ON ANTENATAL AND POSTNATAL HEALTH EDUCATION**

According to Warren et al (2006:80) in their book, *Opportunities for Africa's Newborns*, an estimated 1.16 million African babies die in the first 28 days of life and 850 000 do not live to past the first week of life, and that 51% of all these deaths occur in sub-Saharan Africa, a region of the world to which Botswana belongs. Researchers have linked maternal mortality with economic development. The well-developed countries have low maternal mortality rates compared to the poorer countries UNFPA (2007), Population Resource Centre (2001) and Koblinsky, Timyan and Gay (1993:14) state that forty percent of women who deliver annually develop complications. The complications can include long-term disabilities, chronic pelvic pain, and damage to reproductive organs, kidney failure, uterine rupture, infertility or mental disability. Death in babies occurs due to low birth weight, infections and prematurity. Child disability and poor child development originate from the early postnatal and childbirth period. Most of the child deaths occur before the first month of life, a period that falls before the 6 week visit, when PNC is sought in Botswana and many other countries. In most African countries, mothers and babies are lost because the mothers do not attend postnatal clinics or are not informed about the importance of PNC (Warren et al 2006:3).

Specific education, health policies, broad social and economic policies influence health physically, mentally and socially. The Institute of Public Health in Ireland (2008:5) states that at individual level, the knowledge, personal and social skills provided through education better equip individuals to access and use information and services to maintain and improve their own and their family's health. The educational level of parents influence child and family health, furthermore, maternal health education influences child and family health. HIV positive mothers who received quality health education therefore are bound to be seeking PNC for their own and child's optimum health. It is stated in the "characteristic of an effective health education curriculum" by the Centers for Disease Control and Prevention (2013b:1) that health education must be goal oriented and have behavioural outcomes. This literature states also that health

education should enhance positive health behaviours, correct misconceptions and enforce self-efficacy, personal and social competences which result in the promotion of health and positive decision making behaviours.

According to AIDS info (2012:2), HIV positive pregnant women need to be equipped through health education for the challenges that they are likely to face during the postnatal period. The importance of the baby having a Polymerase Chain Reaction (PCR) test at six weeks should be explained during the antenatal period. The possible outcomes of the medical examinations, tests, prophylaxis and treatment for HIV/AIDS should therefore be outlined during the antenatal period.

The WHO developed a PNC model in 1998 recommending the 6-6-6-6 rule where the mother and her newborn baby should be monitored and cared for within 6 hours of the baby's birth, 6 days, 6 weeks and 6 months after delivery. This care should be provided both at home and in the health care facility.

Warren et al (2006:84-69) explain some of the roles of health care workers which include besides care already mentioned, the provision of information which promotes vaccination and birth registration. During home visits, the health care workers also collaborate with community health workers who could be providing extended PNC at home. It is important to establish functional referral systems between home and the health care facilities.

In Welcome Baby Home (2006a-d), the articles discuss postnatal care and emphasize the fact that postnatal care involves the provision of health messages to promote healthy behaviours and promote exclusive feeding methods which could either be formula feeding or breastfeeding. The messages include the importance of ensuring that the baby is kept in a warm environment. The mother is provided with health information on diet, rest, sleep, supportive systems, family planning, sex after delivery and the identification of illnesses. The mother is also taught to identify danger signs for her and her newborn baby.

## **2.4 LITERATURE REVIEW ON BOTSWANA**

In Botswana, pregnant women are encouraged to register for ANC before 14 weeks of gestation (Ministry of Health (Botswana) 2011:30). This allows for ANC which includes health education to be initiated early. Francistown has 15 health care facilities that offer antenatal and PNC. All pregnant women are offered HIV information and testing on the first ANC visit and HIV positive women receive the usual health education and additional education pertaining to their condition and relevant care. The Ministry of Health National Guidelines on Prevention of Mother-To-Child Transmission of HIV (Ministry of Health (Botswana) 2011:24) states that 95% of women seek ANC where health education is given by the midwife, lay counselor, medical doctor and other health care workers. HIV/AIDS management is a priority in Botswana.

## **2.5 CONCLUSION**

Chapter 2 discussed and explained what literature review is, literature searches that were conducted, the international literature that pertains to antenatal and postnatal health education and literature review relating to antenatal and postnatal health education in Botswana.



## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

Chapter 3 presents the research design, research methods, population universum, inclusion/exclusion criterion, the target population and the sample frame. The accessible population sample is outlined including the sample size, sampling methods, samples obtained per clinic during data gathering and design of questionnaires.

This study followed a quantitative research paradigm because quantitative research is concerned with measuring attributes and relationships in a population (Polit & Beck 2008:15; 729).

#### **3.2 RESEARCH DESIGN**

A quantitative design was chosen for this study, and a descriptive cohort quantitative design was used. This was chosen as a suitable design because the purpose of the study was to determine the effect of antenatal health education on PNC/ attendance amongst HIV positive women as the aim of quantitative research is to classify features, count them and then construct some statistical models that help in explaining the researcher's observations (Polit & Beck 2008:14-18). A descriptive study often takes the form of a survey, as applicable to this study which is aimed at quantifying the effect of antenatal health education on PNC/attendance among HIV positive women (Joubert et al 2007:78). Joubert et al (2007:78) and Rodney (2007:188-189) state that surveys are typically cross-sectional studies and are used to evaluate programmes that aim to change health care behaviour.

##### **3.2.1 Research methods**

This section discusses the population and sample selection, data collection and data analysis that were utilised in the study. The researcher initially selected the two busiest

clinics in Francistown with a work load of about 100-150 patients a day. Data was collected every week day for three weeks after which the researcher only managed to collect data on Mondays and Fridays due to work constraints.

### **3.2.2 Setting**

Two of the 15 health care facilities in Francistown, Botswana namely Masego and Lapologang clinics were used for data collection. The majority of the sexual reproductive clients seek services at either Masego or Lapologang clinics. After obtaining permission to carry out the study from the Ministry of Health and the District Health Management Team, the researcher was offered a consulting room in each of the two clinics to use for data collection.

### **3.2.3 Population and sample selection**

- **Population universum**

Any HIV positive woman within the child bearing age (15-49 years) and who had attained majority age of 21 years and attended any of the two clinics in Francistown out of the 15 health care facilities were offered an opportunity to participate in the study if they gave consent to do so. Convenient sampling was used i.e. any eligible HIV positive postnatal woman with a baby who was six to eight weeks old were offered an opportunity to participate in the study. Women were coming for six weeks PNC whilst the eight weeks postnatal women brought their babies for weighing, collection of infant formula which is offered by the government or for the first vaccination of the baby.

### **3.3 INCLUSION/EXCLUSION CRITERION**

Botswana and non-citizen HIV positive postnatal women who are 21 to 49 years who consented to participate were included in the study. Twenty-one years is the age of majority in Botswana. Twenty-one to forty nine years include the child bearing age. Teenagers i.e. thirteen to twenty year-old pregnant women were excluded because their parents would need to sign consent forms for them this would have posed a challenge because most of the young people live in town while their parents live in the villages.

HIV positive women within 6 to 8 weeks postnatal period who attend any two of the 15 health care facilities in Francistown and are less than 21 years or older than 49 years of age were excluded from this study. Any woman who did not consent to participate was also excluded from this study.

A total of 100 HIV positive 6-8 weeks postnatal mothers attending 2 of the 15 health care facilities in Francistown city were sampled. A sample size less than 100 would have brought out results that may not be easy to generalise to the population using a 95% confidence interval. The number of HIV positive antenatal pregnant women in Francistown ranges between 1 000 and 1 350 per annum.

### **3.3.1 Sample frame**

All women within 6 to 8 weeks postnatal period who were HIV positive who attended any two of the 15 health care facilities selected for the study in Francistown during the study period were offered an opportunity to participate. All selected participants had a questionnaire administered. None of the women who offered to participate declined.

### **3.3.2 Accessible population**

All HIV positive postnatal women who were within the ages of 21 to 49 years attending any two of the 15 health care facilities in Francistown were offered the opportunity to participate in the study if they were eligible. This reduced any selection bias that would affect generalisation of the findings.

## **3.4 DATA COLLECTION**

Polit and Hungler (1995:639) define data collection as “the gathering of information needed to address a research problem”. Data collection started on 26 April and ended on 30 June 2014. A total of 159 HIV positive women were expected to have attended 6 weeks PNC and brought their children for the first immunisation at 8 weeks of birth. Only 45 women managed to attend and some of these came from surrounding clinics. Some of the reasons for this low attendance for PNC will be explained under the discussion section. The administration of the questionnaire at the clinics was conducted

by the UNISA student researcher who is a qualified general nurse, midwife with a certificate in adult education, degree in Health Care Management and a postgraduate diploma in Public Health.

Data was collected from eligible women who consented in writing to participate in the study. According to Polit and Hungler (1995:33), the approaches used in quantitative studies are more structured and use a formal instrument that is used to collect exactly the same information from all participants.

### **3.4.1 Pilot study**

A pilot study was carried out on 10 respondents using the questionnaires in two of the clinics before embarking on the main study project. The researcher excluded the clinic name and date of data collection to maintain anonymity. These were added to the questionnaires before embarking on the main study. The Setswana version of the questionnaire had some spelling mistakes which were also corrected before commencing data collection for the main study. Most of the respondents chose to respond to Setswana questionnaires as opposed to the English questionnaire. The pilot study was carried out in a private and well ventilated consulting room within the clinic. The questionnaire was reported by all respondents to be clear and easy to understand. The respondents from the pilot study were included in the 100 cohort.

### **3.4.2 Data collection process**

#### **3.4.2.1 Primary data**

A questionnaire was administered with each and every woman who gave consent to participate in this study. According to Polit and Hungler (1995:188), questionnaires need to be clearly written with questions that are simple and not ambiguous. One advantage of using questionnaires is that they can be applied to many populations as they are flexible.

Each period of administering the questionnaire was scheduled to take 15-20 minutes although some questionnaires were answered in 7-10 minutes. The questionnaire had questions covering information on the respondent's biographical data, antenatal health

education, postnatal information and care and health provider information. Codes were allocated to the study respondents. No name was reflected on the data collection form for the sake of confidentiality and to maintain anonymity. All data was captured electronically.

Verbal responses were recorded in a uniform way on the questionnaire form. Responses were quantified and analysed for interpretation and summaries including percentages, other measurement of variables and measures of construct were made. The data was stored under lock and key.

#### **3.4.2.2 Secondary data**

The researcher reviewed the postnatal registers in the two clinics where the study was undertaken. This was useful in determining the effects of antenatal health education on postnatal care among HIV positive pregnant women. The assumption is that postnatal visits would be proxy for receiving postnatal care.

#### **3.4.3 Validity and reliability**

Validity is the degree to which an instrument measures what it is intended to measure (Polit & Beck 2008:735). According to Krueger, Nelson and Wolanin (1978:207), validity is the maximisation of the true score variation and the minimisation of error variation of the instrument. Joubert et al (2007:120) state ways of improving and evaluating validity utilizing face, content, predictive and inconsistent validity. Face validity refers to the measure that the question makes sense to those who are knowledgeable of the subject and interviewers who are conversant of the language and culture of the participants. It is important to ascertain that questions asked are representative of what is being measured. In content validity, the measure should account for all elements or concepts being investigated. Criterion validity refers to evaluating the measurement instrument against the most valid measurements that are available. Predictive validity, in turn, confirms a hypothetical association that was theoretically implied. Finally, inconsistent validity refers to the fact that the measure may be valid in one group but will not be valid in another group (Joubert et al 2007:120).

Polit and Hungler (1995:365) state that in construct validity, the question that is asked is “Is the abstract concept being investigated adequately being measured by this instrument?”

People who are conversant with midwifery such as my faculty advisor, my supervisor at work, two midwifery lecturers and my work colleagues read the questionnaire draft and contributed towards amendments that were included to come up with the final questionnaire.

#### **3.4.3.1 Internal validity**

The questionnaire that was used for data collection was similar for all study respondents. It included questions related to respondent’s biographical data, setting for health education during the antenatal period and health education offered during the antenatal period and then postnatal attendance from birth to 6-8 weeks after delivery. Colleagues who are researchers, doctors, nurses and midwives were given an opportunity to review the questionnaire. Experts such as senior researchers and statisticians were consulted to review the tool before it could be used. The questionnaire was piloted on 10 HIV positive postnatal women (6-8 weeks post-delivery) in the two study sites. The researcher administered the questionnaire on women who volunteered to be included in the pilot study to attain a quality tool that is stable before embarking on the main study.

#### **3.4.3.2 External validity**

All HIV positive women who are 6 to 8 weeks postnatal who attended either Masego or Lapologang clinics in Francistown city during the period of the study were offered an opportunity to participate if they consented to do so. Convenient sampling was used to identify eligible participants. The study did not discriminate anyone due to status, tribe etc. The student researcher who is a qualified nurse midwife collected data by administering the questionnaire to all respondents. This means that there was no variation of experiences on the researchers collecting data. The results of the study from the two clinics were generalised to the antenatal HIV positive mothers attending clinics in Francistown city. Recommendations made in Chapter 5 will be applied in all of

the fifteen clinics in Francistown city. The information will also be disseminated to the District Health Management Team and their staff, the Ministry of Health in Botswana and other relevant stakeholders. The study findings will also be disseminated in workshops in Botswana and in international conferences so that it can be generalised in different countries.

#### **3.4.4 Reliability**

Reliability is the ability of an instrument to be repeatedly or constantly used and yield the same results for the attribute it is supposed to measure. Reliability deals with accuracy and consistency (Polit & Hungler 1995:347). The questionnaire was piloted on 10 respondents who volunteered to be included in two health care facilities in Francistown which are Masego and Lapologang clinics. Questionnaires that have been translated to Setswana (for non-English speaking HIV positive postnatal women) by health care workers and approved by the HRDC in the Ministry of Health in Botswana were administered. The PNC and attendance among HIV positive postnatal women was correlated to the health information which is in the data collection tool to identify any relationships.

### **3.5 DATA ANALYSIS**

Research questions were analysed as follows:

- Biographical data that included the age of the respondents, their marital status, the church which they attend, their educational qualifications, where they live, the number of children they have and their employment status.
- The clinical information of the respondents which included the knowledge of the period of the respondent's HIV status and who gave antenatal health education during their pregnancy.
- The health education that was actually given when the respondent was pregnant and when the respondent received postnatal care.

Graphs and tables were used to classify and quantify data for clear interpretation.

### **3.6 ETHICAL CONSIDERATIONS**

The Belmont report explains and summarises ethical principles which were identified by the US National Commission for the protection of Human Subjects in biomedical and behavioural research. Joubert et al (2007:31-32). The three basic principles included in the report were; respect for persons, beneficence and justice.

Respect of people entails two ethical areas which are that individuals should be treated as autonomous agents who are able to make deliberations of their choice and that those who have diminished autonomy such as children, comatose persons etc. are to be protected (Joubert et al 2007:32).

Beneficence and non-maleficence cover two convictions which are; (a) treating people with respect, (b) respecting their decisions and (c) protecting them from harm and making sure that their well-being is maintained. According to Joubert et al (2007:32-33), it is important to maximise the possible benefits and minimise possible harm.

Justice deals with treating all participants alike and equitably. This does not mean that people are equal but that they should receive the same treatment without prejudice.

#### **3.6.1 The respondents**

According to Burns and Grove (1999:80), the subject rights and rights of others must be protected. This study did not infringe upon the rights of the subjects. Each and every HIV positive postnatal woman who attended any of the 15 health facilities in Francistown was given an equal opportunity to participate in the study as long as they were above 21 to 49 years old. Those who were eligible and accepted to participate in the study were given unique identification numbers for anonymity. No names were used. Written consent was obtained from each and every respondent who accepted to be involved in the study and that there was a questionnaire to be administered. The administration of the questionnaire was 15-20 minutes only. Every participant was respected and no harm was incurred. The risks and benefits of participating in the study were outlined. There were no known risks anticipated except that the respondents may spend more time than the time stated (15-20 minutes) and that a respondent may recall



past events and be upset. If this happens, the respondent was to be given time to reflect and talk more about how she feels. She would also be referred to a health care worker in the clinic who would help counsel her.

Respondents were given information on the advantages of being involved in the study. This study had the advantage that participants received re-enforcement health education during the administration of the questionnaire to equip them to make informed health decisions. The participants were also referred to health care workers in the health care facility for any treatment, referral or counseling.

HIV infected clients are prone to stigmatisation. To motivate the client to open up and give information, privacy was maintained. Confidentiality was assured during the administration of the questionnaire and with storage of the completed data collection tools. All questionnaires are to be destroyed by shredding and deleting electronic data after three years of completing the study.

Participation was voluntary. There was no treatment or procedure that was denied the respondents because of being a study participant. Respondents were free to decide to stop the administration of the questionnaire at any time they wished to do so. Medication or health care services were to be rendered to participants even if a participant decided to discontinue the study.

### **3.6.2 The institution**

Ethical approval was sought from the Health Research and Development Division (Council) of the Ministry of Health in Botswana (HRDC) (Annexure B). Letters for access into clinics were obtained from the District Health Management Team in Francistown city (DHMT) (Annexure C). The researcher obtained ethical clearance allowing her to proceed with the research from the University of South Africa ethics committee (Annexure A).

### **3.6.3 Researcher**

The researcher provided all prospective respondents with information on what the research was all about. The advantages and disadvantages of the research and the risks and benefits of the research were explained. The questionnaire and the consent forms were in English and Setswana to allow the respondents to choose the language they were comfortable with. The researcher gave respondents an opportunity to consent or not to consent to participate (Annexure E). She also gave contact details of other people locally or in the Ministry of Health that the respondents could communicate with if they needed to know more about the research or if they had further questions. The researcher was honest and she acknowledged all sources of information.

### **3.6.4 Ethics pertinent to the topic**

This study involved respondents who were vulnerable to stigmatisation and discrimination. All respondents were treated equitably. Their decisions were respected. No respondent needed any psychological assistance during the administration of the questionnaire. All data was treated with utmost confidentiality. Data was stored electronically in a password protected laptop and paper documents were kept in a lockable cupboard. Data will be destroyed by shredding and electronic data will be deleted after three years of the study.

## **3.7 CONCLUSION**

Chapter 3 presented methodology of the study. This chapter discussed the research design, research methods which included the setting, population and sample selection and the inclusion and exclusion criterion. The sample frame, accessible population, data collection process were outlined. The chapter also presented validity, reliability and ethical consideration.

## **CHAPTER 4**

### **DATA ANALYSIS AND INTERPRETATION OF FINDINGS**

#### **4.1 INTRODUCTION**

Analysis, according to Polit and Hungler (1995:635), is a way of organising data in such a way that research questions can be answered. This chapter focuses on the analysis, interpretation and discussion of the results of this study. An Excel spread sheet was used for exploration and analysis of data.

#### **4.2 THE PURPOSE OF THE STUDY**

The purpose of this study was to determine the effects of antenatal health education on PNC among HIV positive women.

##### **4.2.1 Objectives of the study**

The objectives of this study were to:

- describe the health education that HIV positive women who attend postnatal clinics received during the antenatal period
- determine the effects of the antenatal health education given to HIV positive women
- recommend aspects to be included in the antenatal health education for HIV positive women to ensure comprehensive health education

#### **4.3 AN OVERVIEW OF RESULTS**

Masego and Lapologang the two busiest clinics in Francistown were used for data collection. A total number of 100 respondents sixty-one (n=61) were from Lapologang clinic while thirty-nine (n=39) were from Masego clinic. The antenatal registers had a total of 159 HIV positive women, who were supposed to attend 6 weeks postnatal care

within the period of data collection. A total of (n=91) out of the (n=159) HIV positive women were to attend postnatal care at Lapologang and (n=68) at Masego clinic within the data collection period. Forty-five percent (n=45) i.e. 27 from Lapologang plus 18 from Masego of the HIV positive women who came for 6 weeks postnatal care were enrolled by the student researcher. The remaining fifty-five percent brought 8 weeks old babies either for weighing or for the two months immunisation.

The variables that were under study included the biographical data of the respondent where the age, marital status, level of education and housing were reviewed. The respondents were asked about the duration that they have known that they are HIV positive. Information on antenatal health education, the cadre who provided the health information, postnatal home visits and clinic visits were documented.

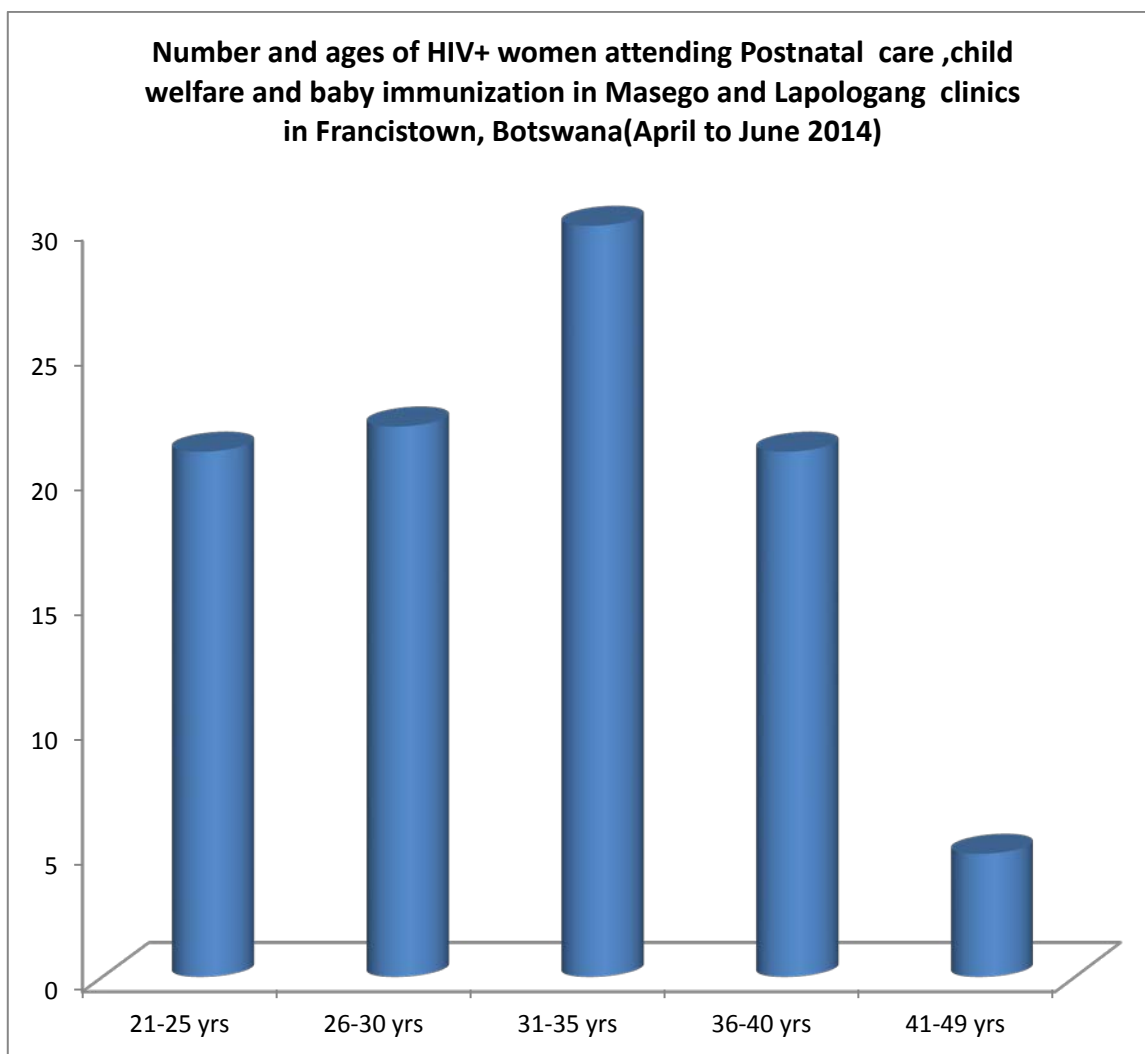
Privacy was maintained during data collection to encourage respondents to open up and give information. The researcher used a private consulting room normally used for consultation by doctors and nurses to prevent stigmatisation.

#### **4.3.1 Biographical data**

A total of 100 HIV positive postnatal women with babies 6-8 weeks were included in the study. Below are the biographical data results.

##### **4.3.1.1 Respondent's age**

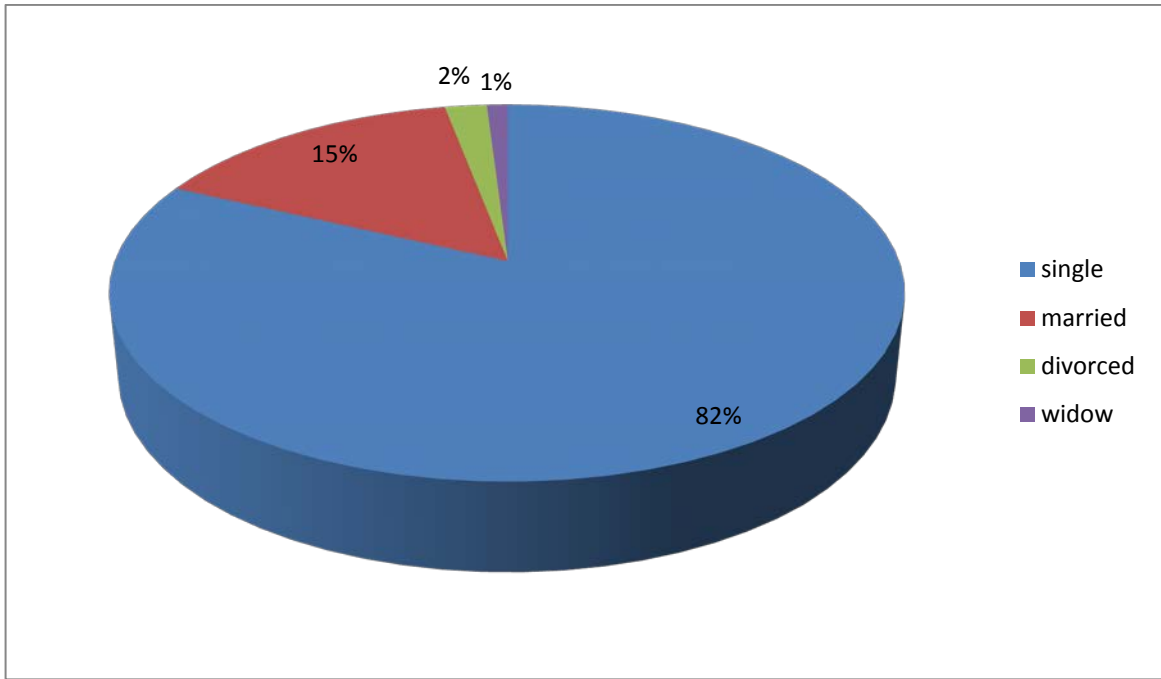
Women with ages ranging from 21 to 49 years were included in the study. These women had either come to the clinic for 6 weeks PNC, brought the baby for weighing at 8 weeks or for the first 8 weeks immunisation. Thirty percent of the women were within the 31-35 year range, 22% were aged 26-30 years, 21% were in the 21-25 year bracket, 21% in the 36-40 years range and only 5% ranged between 41-49 years. Figure 4.1 shows a graphical presentation of the ages of women who participated in the study.



**Figure 4.1 Respondents' age (N=100)**

#### **4.3.1.2 Marital status**

The highest percentage (82%) was single women followed by 15% being married women, 2% were divorced and 1% comprised of widows.



**Figure 4.2 Respondents' marital status (N=100)**

#### **4.3.1.3 Religion**

Botswana is a Christian country with many denominations. Twenty-nine churches were represented. Religion does not hinder women to seek modern health care services in Botswana. Figure 4.3 illustrates the religious affiliation of the respondents.

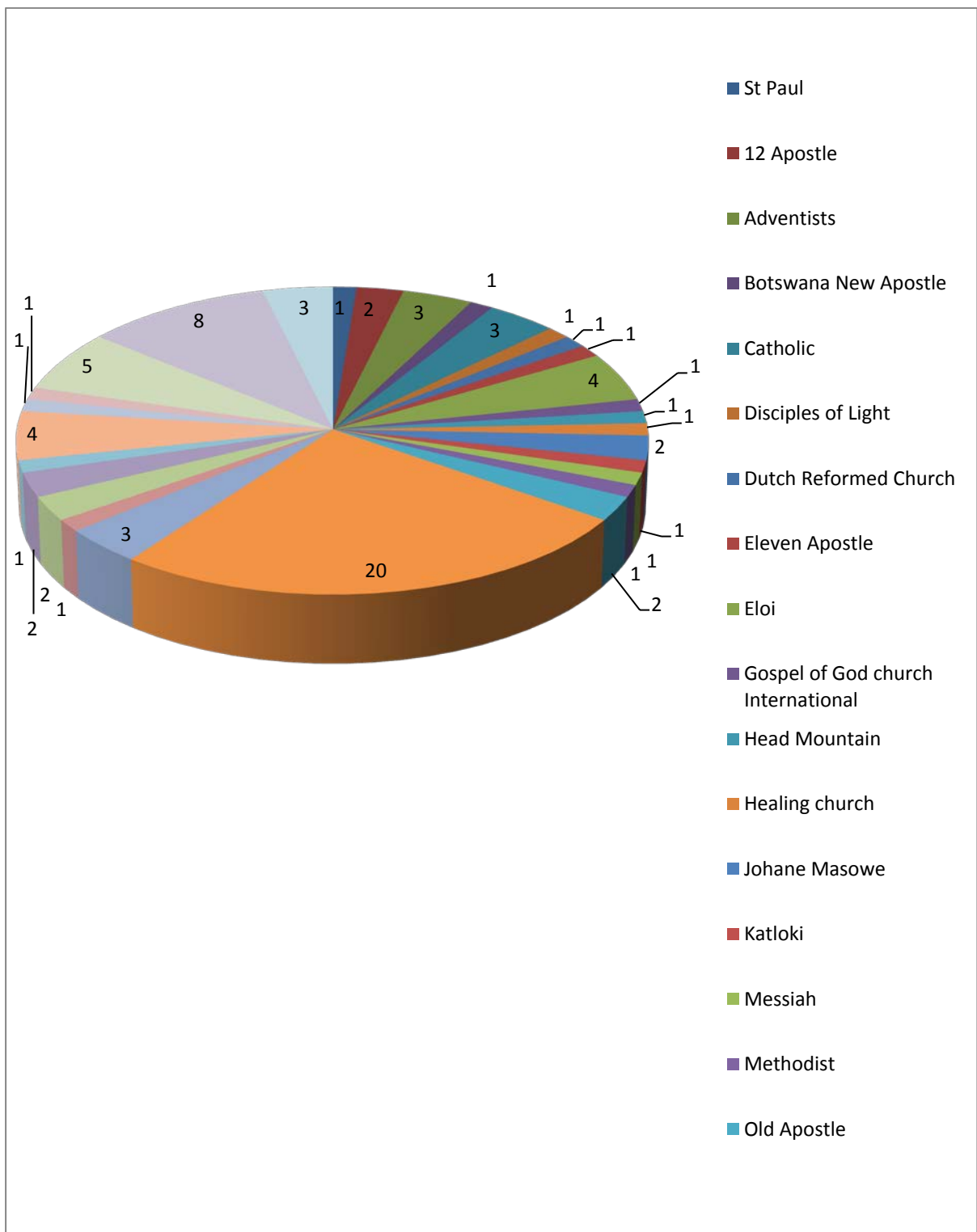


Figure 4.3 Respondents' religion (N=100)

#### 4.3.1.4 Accommodation

Sixty-one percent of the respondents stay in rented housing, thirty seven percent own their homes, one percent live in Government housing for staff and one percent live in company houses. Housing helps in identification of social class. Researchers have linked maternal mortality with economic development. The well-developed countries have low maternal mortality rates compared to the poorer countries (UNFPA 2007; Population Resource Centre 2001; Koblinsky et al 1993).

#### 4.3.1.5 Educational level

Among the respondents, 77% (n=77) had completed high school, 12% (n=12) completed primary school, 9% (n= 9) had a University degree and 2% (n=2) never went to school. A study that was carried out by Bhatia and Cleveland in 1995 showed that there is a positive connection between education and postnatal attendance. It was proven in some studies that women who have secondary education or higher are more independent to demand services. On the other hand, Bhatia and Cleveland (1995) state that women who have primary education are more inclined not to seek antenatal and PNC. This was very characteristic in this study as the majority of the respondents had attained higher education and above.

**Table 4.1 Association of educational level, accommodation and marital status**

Educational level	Number	Percentage	Accommodation		Marital status		
			Rented	Own	Single	Married	Widow
University	9	9	7	2	5	3	1
High school	77	77	50	27	68	9	0
Primary school	12	12	6	6	11	1	0
No education	2	2	1	1	1	1	0

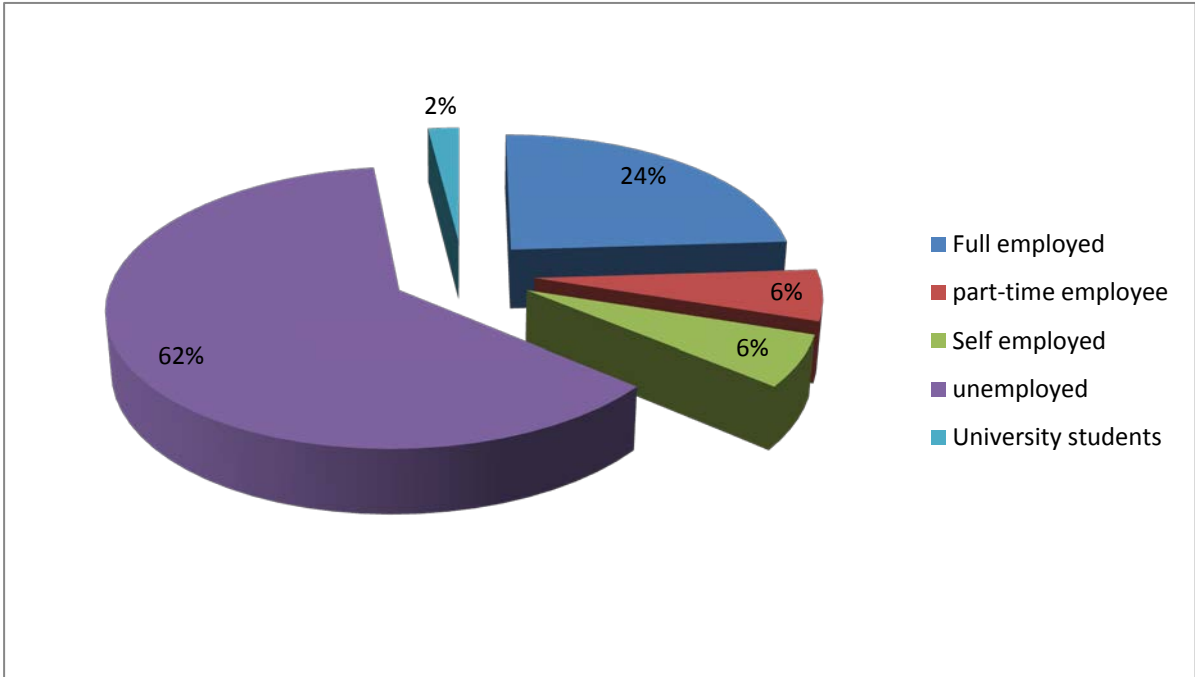
The majority of women in the study was single and lived in rented houses despite their educational qualification. Specific education, health policies, broad social and economic policies influence health physically, mentally and socially. The Institute of Public Health in Ireland (2008:5) states that at individual level, the knowledge, personal and social skills provided through education better equip individuals to access and use information



and services in order to maintain and improve their own and their family's health. Educational level and level of parents influence child and family health. Maternal health education influences child and family health. HIV positive mothers who received quality health education therefore are bound to be seeking PNC for their own and child's optimum health. Seventy percent of the HIV positive women with babies 6-8 weeks had attained high school.

**4.3.1.6 Employment status**

Though the majority of these women were unemployed, they had attained high school education. Gill, Pande and Malhotra (2007:21) state that high rates of female education are consistently associated with an increase in the use of maternal health services. They allude to the fact that women who are gainfully employed have more opportunities to reduce maternal mortality. However, in this study 62% (n=62) of the women were unemployed, they had attained higher education which enhanced them to seek health care services.



**Figure 4.4 Employment status of women in the study (N=100)**

### 4.3.2 Number of pregnancies

The respondents in this study were varied from gravida 1 to 9. 6% (n=6) were gravida 1, 28% (n=28) gravida 2, 33% (n=33) gravida 3, 11% (n=11) gravida 4, 11% (n=11) gravida 5, 8% (n=8) gravid 6, 1% (n=1) gravida 7, 1% (n=1) gravida 8, 1% (n=1) gravida 9. The women also had varied parity (number of viable babies born) which is reflected in figure 4.5 and in the frequency distribution table 4.2.

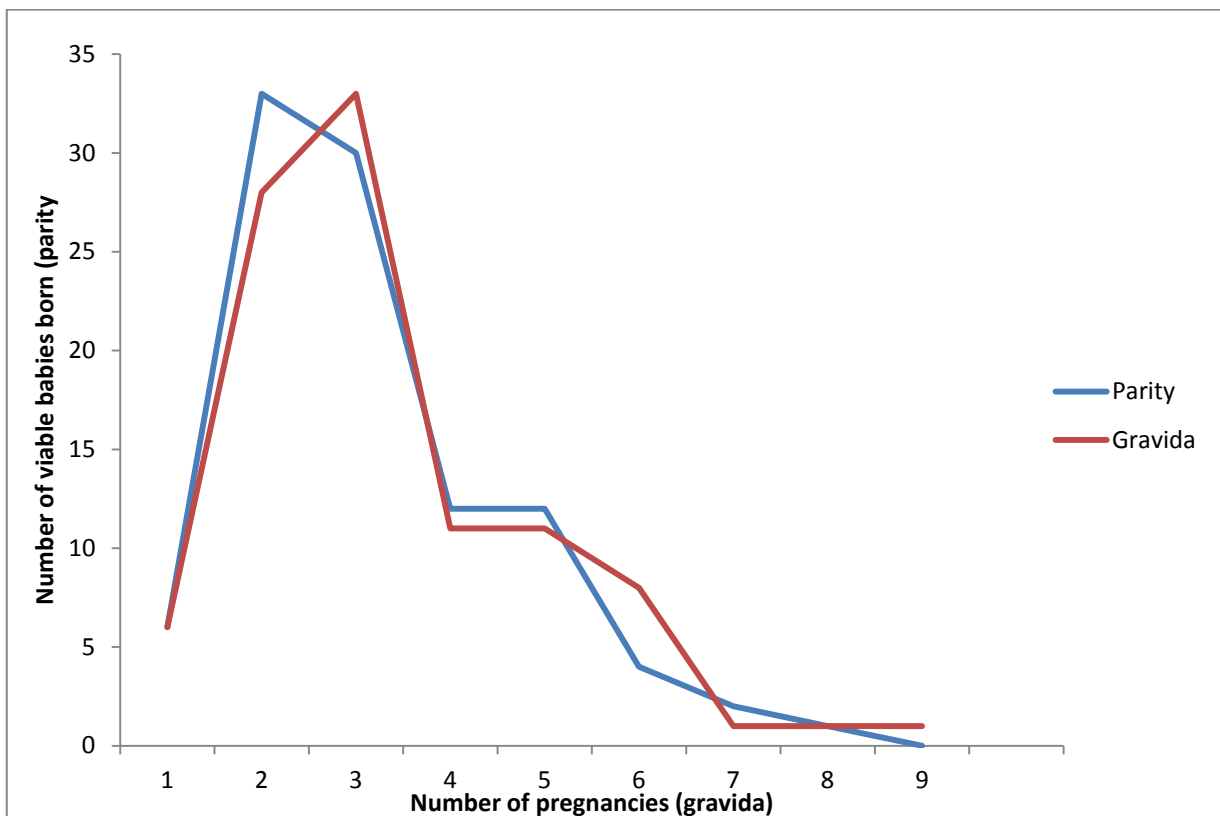
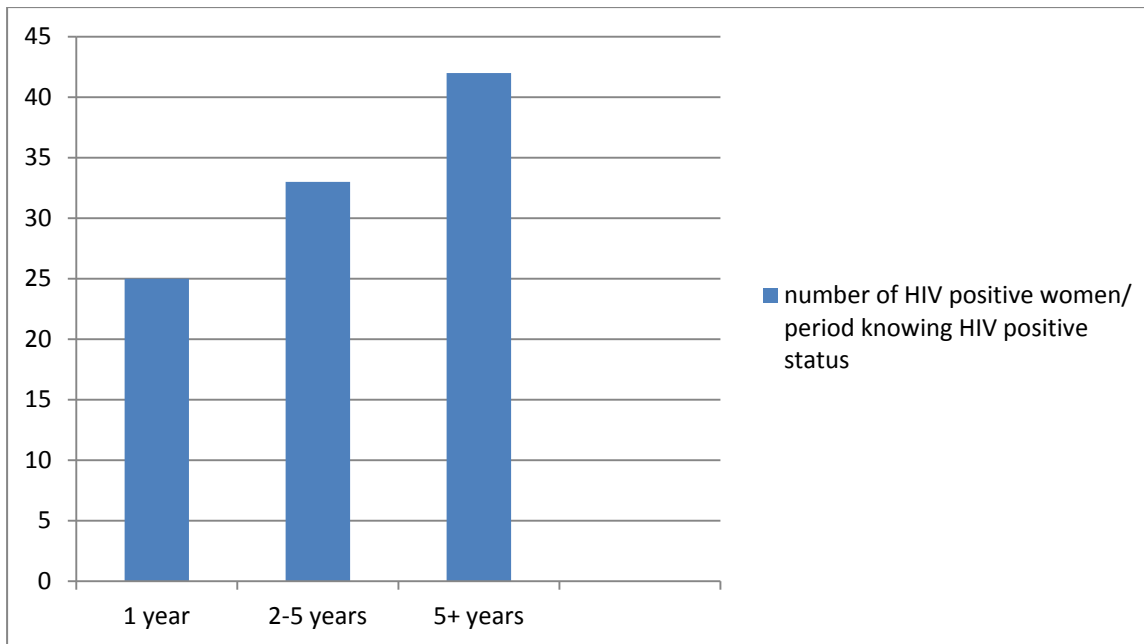


Figure 4.5 Number of pregnancies and term babies born to respondents (N=100)

### 4.3.3 Knowledge of HIV positive status

All respondents were aware of their HIV positive status. Twenty-five (25%) knew that they were HIV positive for 1 year, 33% (n=33) for 2-5 years and 42% (n=42) for more than five years. The women were very comfortable to talk about their status and the health education that they were given during pregnancy.



**Figure 4.6 Number of HIV positive women/period knowing HIV positive status (N=100)**

#### 4.3.4 Frequency distribution for the parity of women

Six women in the study had born the following viable babies:

n=6	had 1 baby born
n=33	had 2 viable babies at birth
n=30	3 viable babies
n=12	4 babies
n=12	5 viable babies
n=4	6 viable babies
n=2	7 viable babies
n=1	8 viable babies

The majority of women had 2-3 babies. This means that they most probably were exposed to antenatal health education before. Mothers who have previously had babies tend to have more knowledge from previous health education experience. The next table shows that generally health education was given but the quality could not be

determined in this study. It has already been proven that more than 50% of the postnatal women did not attend the clinic where they had ANC.

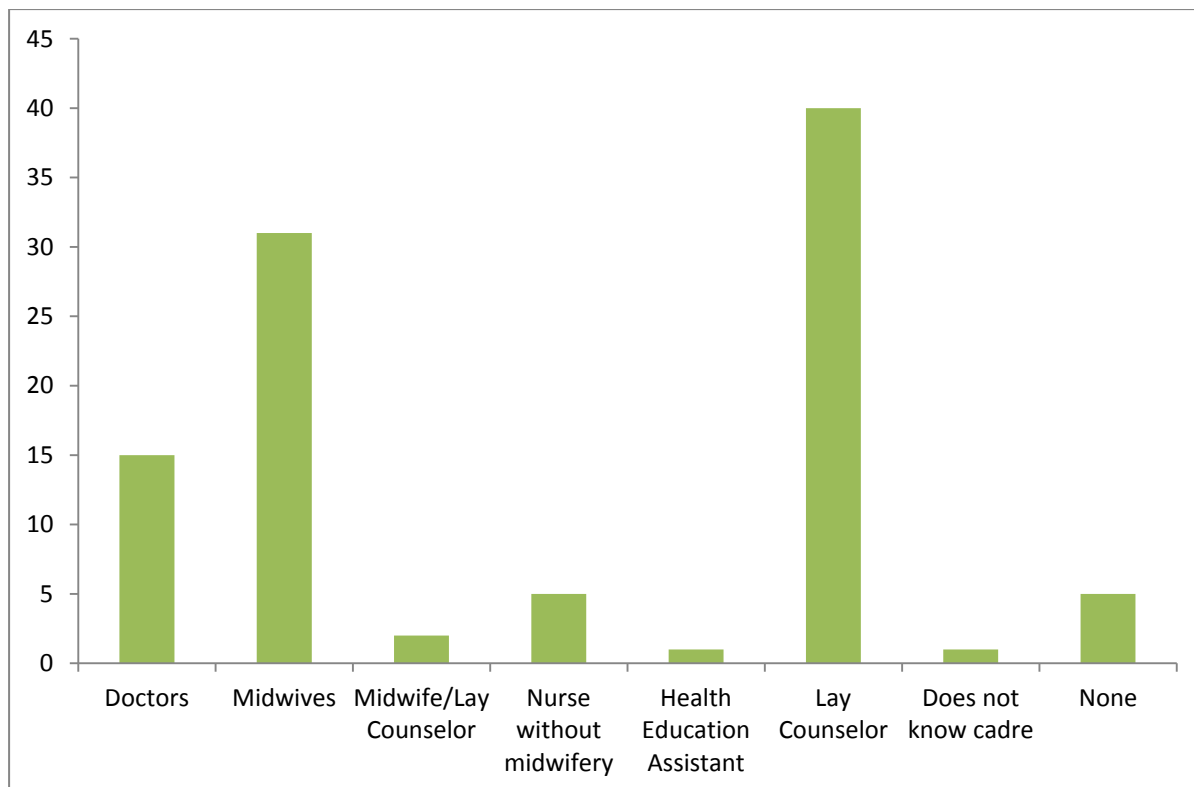
**Table 4.2 Frequency distribution for the parity of women (N=100)**

<b>Parity</b>	<b>Number</b>	<b>Percentage</b>
1	6	6
2	33	33
3	30	30
4	12	12
5	12	12
6	4	4
7	2	2
8	1	1

#### **4.3.5 Women given antenatal health education**

According to AIDS info (2012:2), HIV positive pregnant women need to be equipped through health education for the challenges that they are likely to face during the postnatal period. The importance of the baby having a DNA/PCR test at six weeks should be explained during the antenatal period. The possible outcomes of the medical examinations, tests, prophylaxis and treatment for HIV/AIDS should be outlined during the antenatal period.

In this study, 40% of the HIV positive women received health education from lay counselors, 31% from midwives, 15% from doctors, 5% from nurses without midwifery, 5% did not know the cadre who gave them health education, 2% were given health education by both lay counselors and midwives, 1% by a health education assistant and 1% did not receive health education.



**Figure 4.7 Women given antenatal health education (N=100)**

All the different cadres who gave health education have varied qualifications. This affects the quality of health education that was offered. In characteristic of an effective health education curriculum by the Centers for Disease Control and Prevention (2013b:1), it states that health education must be goal oriented and have behavioural outcomes. The researcher enrolled n=45 (28%) out of n=159 HIV positive postnatal women with babies who were 6 weeks old. Several HIV positive postnatal mothers brought babies who were three months and above for the first time to the clinic because in Setswana culture, a woman has to stay in confinement for at least three months after delivery (Botsetse). These women were excluded because their babies were older than the 8 weeks cut off point.

#### **4.3.6 ANC health education in Botswana**

According to the Botswana National Guidelines, pregnant women in Botswana are encouraged to register for ANC before 14 weeks of gestation (Ministry of Health (Botswana) 2011:30). This allows for ANC which includes health education to be initiated early. Francistown has 15 health care facilities that offer antenatal and PNC. All pregnant women are offered HIV information and testing on the first ANC visit, and HIV

positive women receive the usual health education plus education pertaining to their condition and relevant care.

**Table 4.3 Health education content received by women**

<b>Questions</b>	<b>Yes</b>	<b>No</b>
Growth and development of the baby?	69%	30%
Diet appropriate for a pregnant woman	75%	25%
Importance of personal hygiene	84%	16%
Smoking during pregnancy	78%	28%
Drinking alcohol or using other illicit drugs	74%	26%
Sexual intercourse in pregnancy	78%	22%
Vaccination for both mother and baby	79%	21%
Infections during pregnancy	73%	27%
Bleeding during pregnancy	71%	21%
HIV in pregnancy	93%	7%
Information on Mother to Child transmission of HIV	90%	10%
Diabetes Mellitus in pregnancy	54%	46%
Taking medication in pregnancy	85%	15%
Vitamins and supplements for pregnant women	75%	25%
Delivery options	70%	30%
Environmental and workplace exposure if applicable	38%	62%
Hereditary diseases	77%	23%
Natural diseases	21%	79%
Available medical, psychological and social services for HIV positive pregnant women	61%	39%
Infant feeding options	81%	19%
Importance of attending PNC	70%	30%
Blood tests necessary for mother after delivery	74%	26%
Six weeks HIV testing for your baby	87%	13%
Importance of taking ARV treatment	44%	56%
You visited the clinic or had a health care worker visit you at home	46%	54%
You visited the clinic at 6 weeks?	94%	6%

Table 4.3 indicates that health education was given during the antenatal period to 98% of the respondents. The question, however, is how much of the health education was given and at what depth? The cadres who provided health education to these women had varied qualifications and experience.

The Population Resource Centre (2001) and Koblinsky et al (1993:12) state that 40% of women who deliver annually develop complications. The complications can include long term disabilities, chronic pelvic pain, and damage to reproductive organs, kidney failure, uterine rupture, infertility or mental disability. Death in babies occurs due to low birth weight, infections and prematurity. Child disability and poor child development originate from the early postnatal and childbirth period. Lay counselors are not prepared in-depth for them to give comprehensive health education in midwifery care.

The study also showed that 46% of the respondents were not visited at home until the 6 weeks postnatal visit. According to Population Resource Centre (2001) and Koblinsky et al (1993:12), most of the child deaths occur before the first month of life, a period that falls before the 6 week visit, when PNC is sought in Botswana.

WHO developed a PNC model in 1998 recommending the 6-6-6-6 rule where mother and her newborn baby should be monitored and cared for within 6 hours of the baby's birth, 6 days, 6 weeks and 6 months after delivery. This care should be provided both at home and in the health care facility. Warren (2006:80) states that half of postnatal maternal deaths occur within the first week of baby's delivery. This study revealed that only 46% of the women were visited at home before they came to attend the 6 weeks PNC.

The health care workers also provide information which promotes vaccination and birth registration. During home visits, the health care workers also collaborate with community health workers who provide extended PNC at home. It is important to establish functional referral systems between home and the health care facilities.

### 4.3.7 Hypothesis testing

Given that the proportion of those that receive PNC in the population is equal to 55%.

#### Sample

Total sample size = 100

Number of those that received **PNC** = 45

and

$$'p = 0.45$$

$$'q = 0.55$$

$$Z_{\text{calculated}} = \frac{p - p_0}{SD}$$

$$\begin{aligned} SD &= \sqrt{\frac{pq}{n}} \\ &= \sqrt{\frac{0.45(0.55)}{100}} \\ &= 0.04975 \end{aligned}$$

Our hypothesis is:

$$H_0 : p = 0.55$$

$$H_A : p \neq 0.55$$

$$\text{Now, } Z_{\text{calculated}} = \frac{p - p_0}{SD}$$

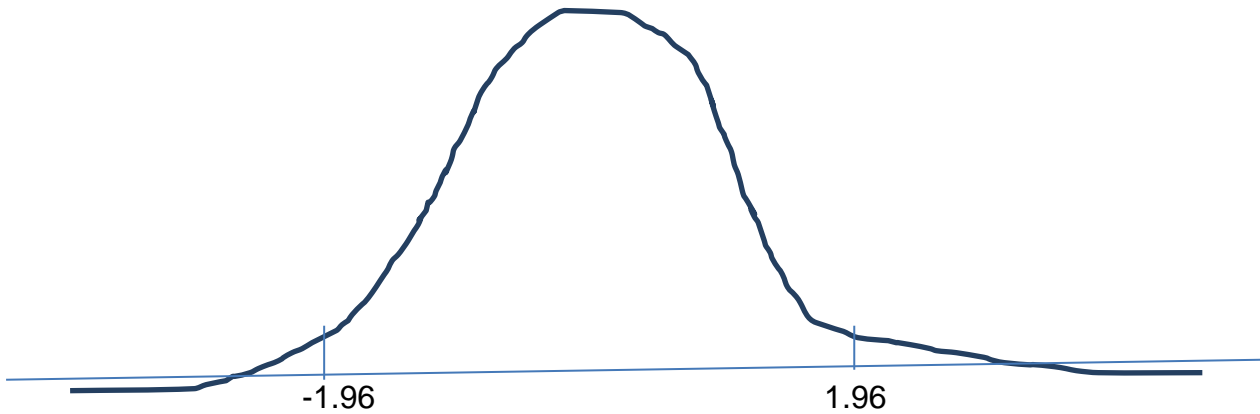
$$= \frac{0.45 - 0.55}{0.04975}$$

$$= \mathbf{0.201}$$



**This is a two tailed test**

**(i) At 5% level of significance**



*Source: Researcher*

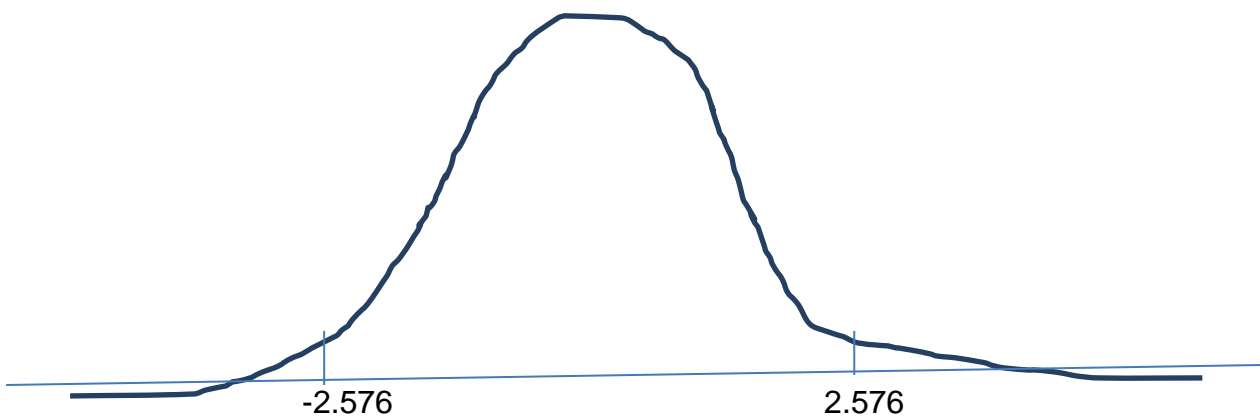
We thus reject the null hypothesis if:

$Z_{\text{calc}} > 1.96$       **or**

$Z_{\text{calc}} < -1.96$

In this research the Z calc is 2.01. Therefore we **reject** the null hypothesis ( $H_0$ ) at 1% level of significance. We thus conclude that the results are **statistically significant** at 1% level of significance.

**(ii) At 1% level of significance**



*Source: Researcher*

We thus reject the null hypothesis if:

$Z_{\text{calc}} > 2.576$       **or**

$Z_{\text{calc}} < - 2.576$

In this research the Z calc is 2.01. Therefore we **accept** the null hypothesis ( $H_0$ ) at 1% level of significance. We thus conclude that the results are **not statistically significant** at 1% level of significance.

#### **4.4 CONCLUSION**

This chapter focused on analysis, interpretation and discussion of the results of this study. The last chapter presents the summary, conclusions, limitations and recommendations.

## CHAPTER 5

### SUMMARY, CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

#### 5.1 INTRODUCTION

This chapter concludes the study. The researcher summarised the findings; briefly discusses the conclusion, limitations and recommendations for practice and further studies.

#### 5.2 PURPOSE AND AIM OF THE STUDY

The purpose of the study was to determine the effect of antenatal health education on PNC among HIV positive women.

The study aimed to:

- describe the health education that HIV positive women who attend postnatal clinics received during the antenatal period
- determine the effects of the antenatal health education given to HIV positive women
- recommend aspects to be included in the antenatal health education for HIV positive women to ensure comprehensive health education

The research questions were:

- What effect does antenatal health education have on HIV positive women on postnatal attendance?
- What is the quality of antenatal health education given to HIV positive women?
- What strategies can be recommended to improve quality of antenatal health education for HIV positive women?

### **5.3 STUDY METHODS**

The study on the effect of antenatal health education on PNC among HIV positive women in Francistown, Botswana was undertaken in 2014. Ethical clearance to conduct the study was obtained from the University of South Africa Ethics Committee, HRDC Botswana and The District Health Management Team for Francistown.

A cohort of 100 HIV positive postnatal women conveniently sampled from two clinics in Francistown, Botswana. The respondents were identified when coming to attend the 6 weeks postnatal clinic, the Child Welfare Clinic where babies are weighed or in the injection room where the babies are immunised. The women were offered an opportunity to participate in the study if they were 21-49 years old. The respondents all gave consent to participate after being given all the information relating to the study.

A questionnaire was administered to obtain data. The questionnaire was in English and Setswana.

### **5.4 CONCLUSION BASED ON THE STUDY OBJECTIVES**

The ages of the respondents who were included in the study ranged from 21 to 49 years. The majority of the respondents i.e. 30% were aged between 31 to 35%. Eighty-two percent were single and they lived in rented houses in Francistown. All the women attended church an indication that church does not hinder the women from seeking modern health care services.

Bhatia and Cleveland in their study (1995) showed that there is a connection between education and postnatal attendance. Women who had achieved secondary education and higher were proven to be independent to demand health care services. In this study, 775 of the participants had attained secondary education, 125 had completed primary school, 9% had a University degree and only 25 had never been to school.

The study further indicated that 62% of the participants were unemployed but most of them had attained secondary education and higher which enhanced them to seek health care services. Most of the participants had two to three babies. This may assumable mean that they had been exposed to health care education in ANC with the

previous pregnancies. The women had varied periods of knowing their HIV status ranging from less than one year to more than five years. Generally the biographical data of the majority of the participants made it possible for them to retain knowledge during antenatal health education since they had achieved secondary education and had more than one baby.

The results of this study are in keeping with the findings of (Bhatia & Cleveland 1995) as ninety-five percent of the respondents received health education during the antenatal period. All aspects of the antenatal health information were given. The health care workers who gave health education varied from technical health care cadres such as health care education assistants and lay counselors to health care professionals who were nurses, midwives and medical doctors. The study showed that health education was done by lay counselors followed by midwives, doctors and then other cadres. The majority i.e. 40% of the women were given health education by lay counselors. The quality of health education given by these health care cadres varies extensively in quality because of their different qualifications and knowledge levels.

## **5.5 BRIEF SUMMARY OF THE STUDY**

The study showed that the HIV positive pregnant women were given health education by different cadres of health i.e. doctors, nurses with no midwifery, midwives, health assistants and lay counselors. Only 45 out of 159 HIV positive women brought their babies for PNC. This means that only 28% of six weeks babies and their mothers received PNC at the appropriate time. There is a possibility that some of the women moved to other clinics in the country but this cannot be proven in this study since there is no data linking PNC in the country.

In this study, lay counselors gave health education to most of the HIV positive postnatal women. This cadre is prepared for HIV counseling and testing and infant feeding counseling only. It is clear that lay counselors may give health information but at a very superficial level. One major cause of this challenge is that the midwives are responsible for consulting and treating antenatal, postnatal and all clients seeking family planning services. The clinics where data was collected see one hundred to one hundred and fifty (100-150) patients a day with about a third seeking reproductive health care services. The midwives complained that they did not have time to give in-depth health

information because they have too many clients. According to the National campaign for safe RN-to-patient staffing ratios ([s.a.]), the recommended nurse patient ratio in skilled nursing facilities is 1 nurse to 5 patients. Recommendations for practice and further studies to improve care have been outlined below.

### **5.5.1 Conclusion**

This chapter concludes the study. It has reviewed the purpose of the study, the study objectives, the research questions and brief summary of the study. The limitations and recommendations of the study are outlined below.

## **5.6 LIMITATIONS OF THE STUDY**

- Collection of data took time because the sample size was not yet attained. This is partly because women have to comply with their culture of confinement for at least three months (Botsetse).
- The quality of health education which was not evaluated in this study could be a contributing factor since health information was given by differently qualified health care workers.
- Only two clinics out of 15 were used for data collection.
- The questionnaire was close ended and did not give much room for collection of qualitative information.
- The antenatal and the postnatal registers are separate. This means that one cannot trace where the client ended. There is no way of determining whether or not the HIV positive antenatal woman ever attended PNC.
- In each of the clinics that were involved in the study, there was one midwife attending to all antenatal, postnatal and family planning clients including babies who required PCR to be done. It therefore means that the waiting period for patients was long. This could be one reason why the clients do not wait for health education.
- The shortage of midwives could also be influencing the fact that clients get health education from lay counselors.

- In Botswana clients are very mobile. There is a possibility that some of the women who are not appearing in the postnatal register of the clinic where they had ANC moved to a different location and may be had PNC there.

## **5.7 RECOMMENDATIONS FOR PRACTICE**

- Equip all cadres of health care workers with quality health education skills through training.
- Increase the number of midwives who consult the antenatal, postnatal and family planning clients.
- Implement an e-register so that the clients can be followed from antenatal clinic to the postnatal clinic. Any clients who do not attend PNC may be visited at home for reinforcement of health education and be encouraged to go to the clinic for PNC.
- Include other cadres such as health education assistants who already do home visits to monitor the health of postnatal mothers after delivery.
- Emphasise the importance of PNC during antenatal health education on each of the client's follow up days.
- Educate communities on the importance of attending both antenatal and PNC using recognised community meetings such as the kgotla meetings (meetings held at the chief's administrative compound), churches, etc.
- Use social media to educate the general public about the importance of attending PNC.
- Emphasise the necessity of the PCR test at 6 weeks for the baby.
- Disseminate information to other relevant stakeholders nationally and internationally.

## **5.8 RECOMMENDATIONS FOR FURTHER RESEARCH**

- A qualitative study need to be carried out to assess the quality of health information that is given by each cadre of health e.g. doctors, nurses, midwives etc.
- The perception of PNC by HIV positive mothers.
- The effect of cultural practices on PNC.

## **5.9 CONCLUSION**

This chapter concludes the study. It has reviewed the purpose of the study, the study objectives, the research questions and brief summary of the study, study limitations and recommendations for practice and further research.



## LIST OF REFERENCES

A 15-step model for writing a research proposal. 2010. *British Journal of Midwifery* 18(12):794.

Ackerman, WB & Lolnes, PR. 1981. *Research methods for nurses*. New York: McGraw-Hill.

AIDS info. 2012. *Offering information on HIV/AIDS treatment, prevention and research. Clinical Guidelines Portal. AIDS information. Recommendations for use of antiretroviral drugs in pregnant HIV-1-Infected Women for maternal health and interventions to reduce perinatal HIV transmission in the United States of America*. American Pregnancy Association. HIV/AIDS during pregnancy:

From: <http://americapregnancy.org/pregnancycomplications/hivaids.html> (accessed 18 March 2013).

*Bailliere's Midwives Dictionary*. 2012. Sv "ANC; maternal". Philadelphia: Elsevier Health Sciences.

From: <http://o-www.credoreference.com.oasis.unisa.ac.za/entry/balmwd/maternal> (accessed 25 June 2013).

Burns, N & Grove, SK. 1999. Copyright. *Understanding nursing research*. 2<sup>nd</sup> edition. Philadelphia: WB Saunders.

Burns, N & Grove, SK. 2001. *The practice of nursing research; conduct, critique and utilization*. 4<sup>th</sup> edition. Philadelphia: WB Saunders.

Centers for Disease Control and Prevention (CDC). 2010. *Health education strategies*. From: <http://www.cdc.gov/leanworks/build/healtheducation.htm> (accessed 28 March 2013).

Centers for Disease Control and Prevention (CDC). 2013a. *Pregnancy and childbirth.HIV among pregnant women, infants, and children in the United States*. From: <http://www.cdc.gov/hiv/topics/perinatal/index.htm> (accessed 14 October 2014).

Centers for Disease Control and Prevention (CDC). 2013b. *Characteristics of an effective health education curriculum*.

From: <http://www.cdc.gov/healthyyouth/SHER/characteristics/index.htm> (accessed 28 March 2013).

*Dictionary of Medical Terms*. 2008. Sv "PNC". London: A & C Black. From: [http://o-www.credoreference.com.oasis.unisa.ac.za/entry/acbmedterm/postnatal\\_care](http://o-www.credoreference.com.oasis.unisa.ac.za/entry/acbmedterm/postnatal_care) (accessed 25 June 2013).

Effect of timing of first postnatal care home visit on neonatal mortality in Bangladesh: an observational cohort study. 2009. *British Medical Journal* 339:b2826.

*Encyclopaedia of Global Health*. 2008. Sv "HIV". Thousand Oaks: Sage.

From: [http://www.credoreference.com.oasis.unisa.ac.za/entry/sagejh/aids\\_and\\_infections](http://www.credoreference.com.oasis.unisa.ac.za/entry/sagejh/aids_and_infections) (accessed 25 June 2013).

Federal Ministry of Health, Ethiopia. 2007. Guidelines for prevention of mother-to-child transmission of HIV in Ethiopia. Federal HIV/AIDS prevention and control office: Addis Ababa (accessed 25 October 2014).

Fitzpatrick, M. 2013. *Difference between theory and scientific inquiry*.

From: [http://www.ehow.com/info\\_8505895\\_difference-between-theory-scientific-inquiry.html](http://www.ehow.com/info_8505895_difference-between-theory-scientific-inquiry.html) (accessed 24 April 2013).

Geri-Libiondo, W & Haber, J. 1994. *Methods, critical appraisal and utilization*. 3<sup>rd</sup> edition. St Louis, Missouri: Mosby.

Gill, K, Pande, R & Malhotra, AA. 2007. *Women deliver of development*. Washington DC: Family Care International and International Center for Research on Women. From: (accessed 14 November 2014).

Howell, DC. 2004. *Fundamental statistics for the behavioural sciences*. 5<sup>th</sup> edition. Belmont: Brooks/Cole.

HRSA HIV/AIDS Bureau. 2012. *Guide for HIV/AIDS clinical care: HIV pregnant infected women*. From: [http://www.aids-edu.org/aidsetc?page=cg-403\\_pregnant\\_women](http://www.aids-edu.org/aidsetc?page=cg-403_pregnant_women) (accessed 28 March 2013).

HSC. Public Health Agency. 2013. *Guidelines for the management of HIV positive pregnant women in Northern Ireland*.

From: <http://www.cdc.gov/Features/1Test2Lives/> (accessed 28 March 2013).

Institute of Public Health in Ireland. 2008. *Health impacts of education: a review*. Dublin.

Jacobson, NM. 2002. *Encyclopedia of Nursing and Allied Health*. Detroit. Gale Group.

Jeffels, S. 2013. *What is the meaning of conceptual framework in research?*

From: [http://www.ehow.com/about\\_6664512\\_meaning-conceptual-framework-research.html](http://www.ehow.com/about_6664512_meaning-conceptual-framework-research.html) (accessed 23 April 2013).

Joubert, G, Ehrlich, R, Katzenellenbogen, JM & Abdool Karim, SS. 2007. *Epidemiology; a research manual for South Africa*. 2<sup>nd</sup> edition. Cape Town: Oxford University Press.

Koblinsky, M, Timy, J & Gay, J. 1993. *Adolescents' use of maternal and child health*.

From: [www.guttacher.org/pubs/journals/3200606html](http://www.guttacher.org/pubs/journals/3200606html) (accessed 17 July 2013).

Krueger, JC, Nelson, AH & Wolanin, MO. 1978. *Nursing research, development, collaboration and utilization*. Maryland: Aspen.

Liyasu, Z, Kabir, M & Galadanci. HS. 2005. *Awareness and attitude of antenatal towards HIV voluntary testing and counseling in Amim, Keno, Teaching Hospital, Pub Med. Niger*.

Ministry of Health (Botswana). 2001. *National guidelines: Prevention of mother-to-child transmission (PMTCT) of HIV*. Gaborone: Ministry of Health.

Ministry of Health (Botswana). 2003. *Adolescent sexual and reproductive health implementation strategy*. Gaborone: Ministry of Health.

Ministry of Health. (Botswana). 2004. *Sexual and reproductive health. Policy guidelines and service standards*. Gaborone: Ministry of Health.

Ministry of Health (Botswana). 2007. *Infant and young child feeding counseling: The Botswana integrated course, Participant's manual*. Gaborone: Ministry of Health.

Ministry of Health (Botswana). 2009. *National guidelines for HIV testing and counseling*. Gaborone: Ministry of Health.

Ministry of Health (Botswana). 2011. *PMTCT Program Botswana National Guidelines. Prevention of Mother-to-Child Transmission (PMTCT) of HIV*. Gaborone: Ministry of Health.

Ministry of Health (Botswana). 2012. *Botswana national HIV/AIDS treatment guideline*. Gaborone: Ministry of Health.

Montgomery, KS. 2003. Childbirth education for the HIV-positive women. *The Journal of Perinatal Education*.

From: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1595169/> (accessed 19 October 2012).

*Mosby's Emergency Dictionary*. 1998. Sv "infant". Philadelphia: Elsevier Health Sciences.

From: <http://o-www.credoreference.com.oasis.unisa.ac.za/entry/ehsmed/infant> (accessed 25 June 2013).

Mwifadhi, M, Bright O, Joanna, AS, Rachel, AH, Adiel, KM, Hassan, M, Marcel, T & David, S. 2009. *The use of antenatal and postnatal care: perspectives and experiences of women and health care providers in rural southern Tanzania*.

From: <http://www.biomedcentral.com/1471-2393/9/10> (accessed 28 March 2013).

National campaign for safe RN-to-patient staffing ratios. ([s.a.]).

From <http://www.nationalnursesunited.org/issues/entry/ratios> (accessed 27 October 2014).

*Offering information on HIV/AIDS treatment, prevention and research.* 2012. AIDS information.

From: <http://adisinfo.nih.gov/guidelines/html/2/perinatal-guidelines/185/postpartum-follow-up.org> (accessed 25 October 2012).

Office of the rapporteurs on the rights of women. 2006. *International American Commission on Human Rights*. Washington DC.

From: [www.cidh.org/women/SaludMaternal10Eng/MaternalHealthChap2eng.htm](http://www.cidh.org/women/SaludMaternal10Eng/MaternalHealthChap2eng.htm) (accessed 13 November 2012).

*Pharmaceutical Medicine Dictionary.* 2001. Sv "mortality". Philadelphia: Elsevier.

From: <http://o-www.credoreference.co.oasis.unisa.ac.za/entry/pmd/mortality> (accessed 25 June 2013).

Polit, DF & Beck, CT. 2008. *Textbook for nursing research: generating and assessing evidence for nursing practice*. 8<sup>th</sup> edition. Philadelphia: Lippincott Williams.

Polit, DF & Hungler, BP. 1995. *Nursing research, principles and methods*. 5<sup>th</sup> edition. Philadelphia: Lippincott.

*PPP Healthcare. Postnatal care medical fact sheet.*

From: <http://www.axapphealthcare.co.uk/personal/medical-health-centres/fact-sheet/postnatalcare> (accessed 16 November 2012).

Rodney, S. 2007. *Citing the Data*. Baylor University: Texas.

*Saunders Comprehensive Veterinary Dictionary.* 2012. Sv "WHO". Philadelphia: Elsevier.

From: <http://o-www.credoreference.com.oasis.unisa.ac.za/entry/ehsverdict/who> (accessed 25 June 2013).

Starky, W. 2013. *What is scientific method of research?*

From: [http://www.ehow.com/about\\_6296762\\_scientific-method-research.html](http://www.ehow.com/about_6296762_scientific-method-research.html) (accessed 24 April 2013).

Stewart, DS. 2013. *Difference between conceptual and theoretical framework*. Demand media.

From: [http://www.ehow.com/info\\_8769890\\_difference-between-conceptual-theoretical-framework](http://www.ehow.com/info_8769890_difference-between-conceptual-theoretical-framework) (accessed 23 April 2013).

Suddarth, DS. 1991. *The Lippincott manual of nursing practice*. 5<sup>th</sup> edition. Philadelphia: Lippincott.

Svensson, JL. 2005. *Antenatal education: meeting consumer needs. A study on health services development*.

From: <http://epress.libiuts.edu.au/research/handle/2100/948> (accessed 25 April 2013).

The effects of postnatal health education for mothers on infant care and family planning practices in Nepal: a randomized controlled trial. 1998. *British Medical Journal* 14:316 (7134):805-811. From: <http://www.bmj.com/content/316/7134/805> (accessed 28 January 2013).

*The Free Dictionary*. 2009. Medical dictionary. Sv "effect".

From: <http://medical.dictionary.thefreedictionary.com> (accessed 7 July 2013).

*The Royal Society of Medicine Health Encyclopedia*. 2000. Sv "infant mortality". London. Bloomsbury.

From: [http://o-www.credoreference.com.oasis.unisa.ac.za/entry/rsmhealth/infant\\_mortality](http://o-www.credoreference.com.oasis.unisa.ac.za/entry/rsmhealth/infant_mortality) (accessed 25 June 2013).

Titaley, CR, Hunter, CL, Heywood, P & Dibley, MJ. 2010. *Why don't some women attend antenatal and postnatal care services?: A qualitative study of community members perspectives in Garut, Sukabumi and Ciamis districts of West Java Province, Indonesia*.

From: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2964562> (accessed 28 March 2013).

Tutor, S. 2013. *Scientific methods of research inquiry*.

From: [http://www.ehow.com/info\\_8315461\\_scientific-methods-research-inquiry.html](http://www.ehow.com/info_8315461_scientific-methods-research-inquiry.html) (accessed 24 April 2013).

UNICEF. 2012. *Country profile. Botswana. Maternal, newborn and child survival*. Statistics and Monitoring Section/Policy and practice. UNICEF.

UNFPA. 2007. Population Resource Centre 2001. Maternal health issues-Policy project, Geneva: WHO/UNFPA/UNICEF/World Bank.

University of South Africa. Department of Health Studies. 2013. *General Tutorial Letter for Proposal, dissertation and thesis writing. Year module*. Pretoria: UNISA.

Warren, C, Daly, P, Taure, L & Mongi, P. 2006. *Childbirth education for HIV-positive women. Opportunities for Africa's newborns*.

From: [www.bh.int/pmnhc/media/publications/aonsection111\\_4.pdf](http://www.bh.int/pmnhc/media/publications/aonsection111_4.pdf) (accessed 19 October 2012).

Warren, C, Daly, P, Taure, L & Mongi, P. 2008. *Repositioning care in a high HIV environment: Swaziland*. Washington, DC: Population Council.

*Webster Comprehensive Dictionary*. 2000. Sv "impact". Chicago: Ferguson.

Welcome Baby Home. 2006a. *Postnatal care*.

From: <http://www.welcomebabyhome.com/parenting/postnatal.htm> (accessed 18 March 2013).

Welcome Baby Home. 2006b. *Postpartum diet/not very different from your pregnancy diet*.

From: [http://www.welcomebabyhome.com/parenting/postpartum\\_diet\\_parenting.htm](http://www.welcomebabyhome.com/parenting/postpartum_diet_parenting.htm) (accessed 18 March 2013).

Welcome Baby Home. 2006c. *The essentials on postpartum depression*.

From: [http://www.welcomebabyhome.com/parenting/postpartum\\_workout\\_depression.htm](http://www.welcomebabyhome.com/parenting/postpartum_workout_depression.htm) (accessed 18 March 2013).

Welcome Baby Home. 2006d. *The essentials on postpartum workout*.

From: [http://www.welcomebabyhome.com/parenting/postpartum\\_workout.htm](http://www.welcomebabyhome.com/parenting/postpartum_workout.htm) (accessed 18 March 2013).

*What works for women and girls?* 2006. Postpartum.

From: <http://www.whatworksforwomen.org/chapters/17/section/49> (accessed 28 March 2013).

WHO see World Health Organization.

World Health Organization. 2010a. *Millennium Development Goals (MDGs)*.

From: [http://www.who.int/topics/millennium\\_development\\_goals/en/](http://www.who.int/topics/millennium_development_goals/en/) (accessed 16 November 2012).

World Health Organization. 2010b. *Health topics: Health education*.

From: [http://www.who.int/topics/health\\_education/en/](http://www.who.int/topics/health_education/en/) (accessed 16 July 2013).

World Health Organization. 2013. *Health education*.

From: <http://www.who.int/topics/health-education/en/> (accessed 16 July 2013).



# ANNEXURE A

## UNISA ETHICAL CLEARANCE CERTIFICATE



**UNIVERSITY OF SOUTH AFRICA  
Health Studies Higher Degrees Committee  
College of Human Sciences  
ETHICAL CLEARANCE CERTIFICATE**

HSHDC/ 99/2014

Date: 30 January 2014  
Student No: 464-363-9  
Project Title: The effect of antenatal health education on postnatal HIV positive women in Francistown City, Botswana. re among  
Researcher: Stembile Matambo  
Degree: MA in Nursing Science Code: MFHS94  
Supervisor: Dr MB Monyemore  
Qualification: D Litt et Phil  
Joint Supervisor: -

**DECISION OF COMMITTEE**

Approved  Conditionally Approved

**Prof L Roets  
CHAIRPERSON: HEALTH STUDIES HIGHER DEGREES COMMITTEE**

**Prof MM Moleki**   
**ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES**

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

## ANNEXURE B

### HRDC BOTSWANA APPROVED STUDY PERMIT

TELEPHONE: 363 2766  
FAX: 391 0647  
TELEGRAMS: RABONGAKA  
TELEX: 2818 CARE BD



Republic of Botswana

MINISTRY OF HEALTH  
PRIVATE BAG 0038  
GABORONE

REF NO: PPME-13/18/1 PS V (318)

11 April 2014

Health Research and Development Division

Notification of IRB Review: New application

Stembile Matambo  
P o Box 30467  
Metsef  
Francistown

Protocol Title:

**THE EFFECT OF ANTENATAL HEALTH  
EDUCATION ON POSTNATAL CARE  
AMONG HIV POSITIVE WOMEN IN  
FRANCISTOWN**

**Approval Date:** 2 April 2014  
**Expiration Date:** 2 April 2015  
**HRDC Review Type:** HRDD Reviewed  
**Risk Determination:** Minimal risk

**Dear Sir/Madam**

Thank you for submitting a new application for the above referenced study. The study was reviewed and approved for a period of 1 year effective from the approval date.

This permit does not however give you authority to collect data from the selected sites without prior approval from the management. Consent from the identified individuals should be obtained at all times.

The research should be conducted as outlined in the approved proposal. Any changes to the approved proposal must be submitted to the Health Research and Development Division in the Ministry of Health for consideration and approval.

Furthermore, you are requested to submit at least one hardcopy and an electronic copy of the report to the Health Research, Ministry of Health within 3 months of completion of the study. Copies should also be submitted to all other relevant authorities.

**ANNEXURE C**

**FRANCISTOWN DHMT PERMISSION TO CONDUCT SUTDY**

**GREATER FRANCISTOWN DHMT**

ALL CORRESPONDENCE TO  
BE ADDRESSED TO DHMT  
COORDINATOR



P.O.Box 69  
TONOTA BOTSWANA  
TELEPHONE: 243808  
FAX: 24039

Republic of Botswana

REF: GFHMT 1/14 I (98)

DATE: 22<sup>nd</sup> April 2014

TO: Stembile Matambo  
P.O.Box 30467  
Metsef  
Francistown

Dear Madam

**REQUEST FOR PERMISSION TO ACCESS CLINICS IN FRANCISTOWN TO  
CONDUCT A STUDY**

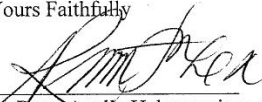
Reference is made to your request letter dated 22/04/2014.

Greater Francistown Health Management Team (GFHMT) acknowledges receipt of your letter and would like to let you know that you have been granted permission to conduct the study at Lapologang and Masego clinics as per your request. The duration of your study will be from 28<sup>th</sup> April 2014 – 31<sup>st</sup> June 2014.

By copy of this letter the Nurse in charge of Masego and Lapologang clinics are duly informed.

Thank you.

Yours Faithfully

  
Dr Ketta Ayelle Habtemariam  
GFDHMT COORDINATOR

cc: Nurse in charge – Masego Clinic  
Nurse in charge – Lapologang Clinic

## ANNEXURE D

### QUESTIONNAIRE

**The effect of antenatal health education on postnatal care among HIV positive women in Francistown city, Botswana.**

**Instructions:** Please answer all the questions as honestly as possible. The information collected for this study will be collated and analysed. You do not need to identify yourself. The researcher will uphold anonymity in that there will be no possibility of any respondent being identified or linked in any way to the research findings in the final research report. Where required, please indicate your answer with a cross (X) in the appropriate box or write a response in the space provided.

#### SECTION 1: DEMOGRAPHIC INFORMATION

##### 1. What is your age?

21-25 years	1
26-30 years	2
31-35 years	3
36-40 years	4
41-49 years	5

##### 2. What is your marital status?

Married	1
Divorced	2
Single	3
Widow	4

##### 3. What is your church?

ZCC	1
Traditional	2
Muslim	3
Adventist	4
Catholic	5
Pentecost	6
Other	7

**Q4. Education attained**

University level	1
High school	2
Primary school	3
None	4

**Q5. Habitation**

Own home	1
Flat	2
Other	4

**Q6. How many children do you have?**

One child	1
Two children	2
Three children	3
Four and above	4

7. How many times have you been pregnant? \_\_\_\_\_

8. How many live children have you given birth to? \_\_\_\_\_ Alive/Died \_\_\_\_\_

9. How old is your baby? \_\_\_\_\_ weeks and days  
\_\_\_\_\_ days

**10. Employment status (tick only one)**

(i)= employed full-time

(ii)=employed part-time

(iii)= self employed

(iv)= unemployed

(v)= other

## **SECTION II: CLINICAL INFORMATION**

**11. For how long have you known that you are infected with the HIV? (tick only one)**

- (i) Less than a year
- (ii) One year
- (iii) Less than 5 years but more than one year
- (iv) Five years
- (v) Above five years

**12. Who spoke to you about health information at the clinic during this last pregnancy? (tick only one)**

- (i) Midwife
- (ii) Nurse who is not a midwife
- (iii) Doctor
- (iv) Health Education Assistant
- (v) Lay Counselor
- (vi) Other health care worker. Specify \_\_\_\_\_
- (vii) I do not know the cadre of the health care worker

13. Did the health care worker talk about? (tick Yes/ No or NA)

(Probe for answers if respondent is hesitant)

Number	Antenatal Health Education points	Yes	No	N/A
13.1	Growth and development of your baby			
13.2	Diet appropriate for a pregnant woman			
13.3	Importance of personal hygiene			
13.4	Smoking during pregnancy			
13.5	Drinking alcohol or using other illicit drugs			
13.6	Sexual intercourse in pregnancy			
13.7	Vaccination for both mother and baby			
13.8	Infections during pregnancy			
13.9	Bleeding during pregnancy			
13.10	HIV in pregnancy			
13.11	Information on Mother to Child transmission of HIV			
13.12	Diabetes Mellitus in pregnancy			
13.13	Taking medication in pregnancy			
13.14	Vitamins and supplements for pregnant women			
13.15	Delivery options (i) normal vaginal delivery (ii) caesarian section			
13.16	Environmental and workplace exposures if applicable			
13.17	Hereditary diseases			
13.18	Natural disasters			
13.19	Available medical, psychological and social services for HIV positive pregnant women			
13.20	Infant feeding options.			
13.21	Importance of attending postnatal care			
13.22	Blood tests necessary for mother after delivery			
13.23	Six weeks HIV testing for your baby			
13.24	Importance of taking ARV treatment			

**14. You visited the clinic or had a health care visit you at home; (tick one only)**

(i) Before 6 days after delivery

(ii) At 6 days after delivery

(iii) 6 weeks after delivery

(iv) I never visited the clinic nor had a health care worker visit me at home

(v) Other – Specify: .....

**THANK YOU FOR YOUR TIME AND COPERATION!**

## **ANNEXURE E**

### **The effect of Antenatal Health Education on postnatal care among HIV positive women in Francistown, Botswana**

#### **Informed consent**

My name is **Stembile Matambo**. I am a nurse studying Master of Arts in Nursing Sciences at the University of South Africa (UNISA). I am here to ask you questions on the health information that you received at the clinic during pregnancy. I will also ask you questions about yourself and the person(s) who provided you with the health information.

I am going to be writing on this form as you give your answers to help me put answers together for all women who will be involved in this study. The form does not have your name to ensure that no one knows who gave me this information. The information will be kept private.

The benefit of this study is that it will help the health care system to develop the information given during pregnancy so that it includes all the necessary information for pregnant women who are HIV positive.

The risk is that the meeting may take more than 15-20 minutes which was in the plan for the interview. You also may be upset as you recall events that happened in the past. If this happens to you, I will give you time to reflect and to talk more about how you feel. I may also refer you to a health care worker in this clinic who will help counsel you.

Participation is voluntary. You may refuse to be included in this study. You may choose to discontinue the interview at any time. Discontinuation will not result in refusal for your treatment or any care for you and your family in this clinic or any other health facility.

You will not receive money or reward of any kind if you agree to participate in this study.

Do you have any questions for me?

If you have questions after you leave the clinic, you can call me on 71601478 or contact the nurse in charge at the clinic on telephone number-----.

In the next part, when it says "I", it is referring to you.



Subject statement:

I have read or the above consent regarding my participation in the study was read to me. I have been given a chance to ask questions that I may have and my questions have been answered to my satisfaction. I understand that the information I give will be kept private. I also understand that participation is voluntary and that I may withdraw from this study at any time. My withdrawal from this study or refusal to participate will in no way affect my or my family's medical care from this clinic or any other clinic.

I agree to participate in this study as a volunteer.

-----

**Signature of volunteer**

-----

**Date**