FACTORS ALTERING HIV AND AIDS POSTNATAL CLIENTS' COMMITMENT TO EXCLUSIVE BREASTFEEDING

by

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DECLARATION

I declare that FACTORS ALTERING HIV AND AIDS POSTNATAL CLIENTS' COMMITMENT TO EXCLUSIVE BREASTFEEDING is my own work and that all the sources 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.

FULL NAMES DATE 30-11-2008

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FACTORS ALTERING HIV AND AIDS POSTNATAL CLIENTS' COMMITMENT TO EXCLUSIVE BREASTFEEDING

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ABSTRACT

The study sought to explore and describe the breastfeeding practices of Human Immunodeficiency Virus (HIV) positive postnatal clients' non-commitment to exclusive breastfeeding in George Mukhari Hospital, South Africa. A non-experimental quantitative design was used.

Inferences drawn from the study were that HIV positive clients that opted for exclusive breastfeeding did not commit for fear of transmission of HIV to the baby and exclusive breastfeeding was stopped before the recommended 6 months. Most of the respondents' partners did not come for counselling. There was lack of emotional support by staff after testing. Health education and emotional support of HIV positive clients has to be intensified.

Key concepts

Exclusive breastfeeding, Human Immunodeficiency virus, Prevention of mother-to-child transmission, Voluntary Counselling and Testing.

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Dedication

To my family, friends, and student midwives

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CHAPTER 1

Overview of the study

1.1 INTRODUCTION

This chapter is an introduction to the study. It outlines the study, describes the background to the problem, formulates the problem statement and discusses the purpose and significance of the study. Research objectives are also stated. The researcher also discusses the research methodology and design, population and sample, setting, data collection and analysis techniques, as well as reliability and validity issues.

1.2 BACKGROUND TO THE PROBLEM

According to the Department of Health Annual Report 2004/2005 (South Africa. Department of Health 2004:54), HIV prevalence in Gauteng is higher in individuals between the ages of 20 and 34 years and showing a sudden increase in 2004 from 6.4% in 1994 to 33.1% in 2004.

The latest record from the Department of Health HIV and AIDS and STI 2007-2011 Strategic Plan states that the HIV prevalence in antenatal women has stabilised at 30% in the 20-24 age group from 2000 to 2005, and HIV prevalence has increased from 30% to 40% in antenatal women of the ages of 25-29 from 2000 to 2005 (South Africa. Department of Health 2006:25).

HIV may be transmitted during pregnancy, labour, puerperium or during breastfeeding (South Africa. Department of Health 2002:4). The problem of HIV and AIDS transmission during pregnancy and labour led to the introduction of a Prevention of Mother-to-Child Transmission Programme (PMTCT). PMTCT was conceptualised by the South African government in the year 2000 and a decision was taken to implement the programme in all nine provinces in South Africa, starting with two pilot sites in each province. The Constitutional Court ordered the government to make the services

available to all pregnant women and their partners in an effort to reduce the transmission of the virus (South Africa. Department of Health 2002:4).

According to the Department of Health 2004/2005 Annual Report, the Gauteng province offered HIV and AIDS comprehensive care and treatment services, including ARV, in 23 targeted health services and intended to increase the facilities to 45 sites in 2006 (South Africa. Department of Health 2004:56).

One of the sites identified by the government was George Mukhari Hospital (formerly Ga Rankuwa Hospital) in Pretoria in February 2002. Registered midwives followed the PMTCT programme at the hospital's antenatal clinic when the programme commenced.

The programme aims at reducing the mother-to-child transmission of HIV to the baby through voluntary counselling of the pregnant women against the disease and testing to determine if the mother is infected or not. All pregnant women who attend the antenatal clinic for the first time are given health education on the prevention of mother-to-child transmission of HIV. Post-test counselling is done in all cases, whether the woman tested HIV positive or negative.

The topics covered at the counselling sessions are as follows:

- **Testing results and counselling**

If the pregnant woman has tested positive for HIV, the partner is invited for counselling and testing. The client will attend the antenatal care clinic routinely according to gestational period or more frequently if there are other problems. Counselling of the client is done at each routine antenatal visit specifically for the HIV positive client.

- **Nevirapine administration**

A pregnant client who tests positive is given Nevirapine 200 mg tablets to take orally if she ruptures membranes or goes into labour, irrespective of the CD4 count. The clients deliver at the George Mukhari hospital where Nevirapine syrup is administered to the babies of infected mothers within 24 hours after birth. The prophylactic treatment is only

applicable to the clients who undergo voluntary counselling and testing and are HIV positive.

- **The choice of infant feeding method**

The choice of feeding method for the baby is also discussed at the counselling session, where some clients who are HIV positive opt for exclusive breastfeeding and some choose formula feeding. Both of these options are discussed with the client and they have to make a decision.

Exclusive breastfeeding

The decision to exclusively breastfeed is supported according to the client's physical and socio-economic situation. The counsellor uses discretion in assisting the client to make a decision (South Africa 2008:50).

According to Jaspan and Garry (2003:324), transmission of the HIV-1 through breastfeeding is between 14% and 28% and the risk of exposure decreases over time because colostrum is higher in viral load than later milk. Breastfeeding is therefore recommended in developing countries with limited resources. Bennet and Brown (2000:345) also support the practice of breastfeeding in areas with high infant mortality.

Intense health education is given to the client regarding breast care. Clients are advised on correct placement of the baby on the breast or latching during breastfeeding to prevent cracked nipples and engorged breasts that are contraindicated for exclusive breastfeeding if the woman is HIV positive. The midwives ensure that the women understand the skills taught in exclusive breastfeeding before discharge from hospital.

Thorne and Newell (2003:457) recommend exclusive breastfeeding and early weaning, as suggested by Coutsoudis and colleagues. HIV positive mothers are advised to exclusively breastfeed for 3 months and have to be recommended and supported (Coutsoudis, Pillay & Spooner 1999:12).

Formula feeding

In a cross-sectional survey done by Hilderbrand, Goemaere and Coetzee (2003:779) at Khayelitsha, Cape Town, on infant feeding, 95% of the clients who were on the PMTCT programme formula-fed their infants. Of these, 70% did not have a problem with formula feeding. The conclusion was that this method was feasible and safe in urban environments where safe water is available.

The researcher consulted registered nurses offering PMTCT and they reported that in one month, of about ten women who tested HIV positive who chose to exclusively breastfeed, four did not adhere to exclusive breastfeeding although they had chosen it as an option during the counselling sessions.

The clients made a decision to breastfeed exclusively for a period of four months, as this method reduces the transmission of the HIV to the baby among other benefits. The problem of non-adherence to exclusive breastfeeding became evident during the six weeks postnatal follow-up of these clients and at the Paediatric Outpatients, as some clients changed to mixed feeding and some to formula infant feeding not agreed upon during post test counselling.

The evidence of lack of commitment to exclusive breastfeeding as a choice of infant feeding led the researcher to the problem. This study aimed to explore and describe the factors which alter HIV and AIDS postnatal clients' commitment to exclusive breastfeeding, as agreed upon during VCT counselling sessions. The researcher considered it necessary to carry out a study to investigate the factors that altered the commitment of certain HIV positive postnatal women to exclusively breastfeed.

1.3 AIM OF THE STUDY

The aim of the study was to encourage and maintain exclusive breastfeeding by HIV positive postnatal clients.

1.4 PROBLEM STATEMENT

Burns and Grove (2005:70) define a research problem as a situation in need of a solution, improvement or alteration; a discrepancy between the way things are and the way they ought to be.

Despite the hospital's concentrated efforts to assist clients, through systematic client education, to exclusively breastfeed their infants, counselling the number of clients who have chosen to exclusively breastfeed remains a problem at George Mukhari Hospital, as the clients do not always adhere to the decision agreed upon during post-testing counselling.

The registered nurses working at the postnatal clinic reported to the researcher that clients who have undergone PMTCT counselling and opted for exclusive breastfeeding due to their HIV+ status do not adhere to the commitment made during post-test counselling. This was evident during the six-week postnatal follow-up, and the researcher decided to investigate.

From the background to the study, clients' lack of commitment to exclusive breastfeeding was reported. In the ideal situation HIV positive clients who opted for exclusive breastfeeding during post-testing counselling sessions would stick to the decision taken, as various factors were considered before the decision was finalised to ensure commitment to exclusive breastfeeding. The factors considered included the following:

- The support that the client receives from those around her regarding exclusive breastfeeding
- Whether sanitation and access to clean and safe water is poor or satisfactory
- Whether access to adequate health care is limited
- Whether exclusive breastfeeding is accepted in the community and household (South Africa. Department of Health [Sa]c).

Professional health practitioners might not be aware of the factors that influence the clients' lack of commitment to exclusive breastfeeding after receiving PMTCT.

1.5 RESEARCH QUESTION

Burns and Grove (2005: 158) describe a research question as a concise, interrogative statement worded in the present tense and usually with one or more variables. This study answered the following question:

- What are the factors that alter HIV and AIDS clients' commitment to exclusive breastfeeding?

1.6 PURPOSE AND OBJECTIVES OF THE STUDY

1.6.1 Purpose

A research purpose is a clear and concise statement of the specific aim or intent of study (Burns & Grove 2005:36). The study set out to explore and describe the factors that altered the commitment of HIV positive clients who had opted to exclusively breastfeed their babies.

1.6.2 Research objectives

Burns and Grove (2005:38) define a research objective as a clear, concise declarative statement expressed in the present tense, focusing on one or two variables. The objectives of the study were the following:

- To describe the factors which altered the HIV/AIDS postnatal clients' commitment to exclusive breastfeeding (EBF).
- Make recommendations to enhance exclusive breastfeeding to HIV positive pregnant clients.

1.6.3 Significance of study

No research findings were found of studies done at George Mukhari hospital on HIV positive postnatal clients' non-adherence to exclusive breastfeeding. It is therefore envisaged that investigating the factors which altered the HIV infected clients'

commitment to exclusive breastfeeding may help to identify groups of clients who have stopped exclusive breastfeeding and hence lead to improved client education.

The findings of this study will contribute to the enrichment of the nursing knowledge. The study will also influence midwives not to be subjective in their assessment of clients who do not exclusively breastfeed. Midwives should adhere to the major objectives of assessment, namely to allow the midwife to understand what the client is experiencing, and to determine the need for termination of exclusive breastfeeding by the client (Andrews & Boyle 2003:315).

The outcomes yielded preferred feeding patterns of HIV positive clients among the clients studied. The results of the study may enable the facilitation of congruent care for clients who are HIV positive and have opted not to breastfeed exclusively. The results of the study could assist the Gauteng Health Department to achieve its goal of improving quality health care through more HIV positive clients breastfeeding their infants exclusively, especially if they chose the option. The study will also reaffirm the need for the establishment of formal in-service training and counselling programmes for nurses/midwives. Health education programmes about the advantages of exclusive breastfeeding for the infant and the infected mother will be reviewed (Polit & Beck 2004:65).

1.7 RESEARCH DESIGN AND METHODOLOGY

➢ Research design

Research design is defined as the researcher's plan for obtaining answers to research questions or for testing hypotheses. It spells out strategies that the researcher adopts to develop accurate and interpretable information (Polit & Beck 2004:162).

The researcher adopted a quantitative approach. This study is a non-experimental, descriptive and contextual quantitative study. In quantitative research, numerical information is collected and analysed statistically in order to give a detailed description of the factors which may alter HIV infected postnatal clients' commitment to exclusive breastfeeding (Polit & Beck 2004: 162). The researcher adopted a descriptive research approach (see chapter 3).

- **Descriptive**

Polit and Beck (2004:192) declare that the purpose of descriptive research is to observe, describe and document aspects of a situation as it occurs naturally. The *Concise Oxford Dictionary* (1995:365) defines *descriptive* as "describing or classifying without expressing feelings or judging". In this study, objectivity is required in the data gathering and data interpretation to discover meaning in a real-life situation. This study focuses on HIV positive clients who show evidence of non-adherence to exclusive breastfeeding.

- **Quantitative research**

Quantitative research refers to a formal, objective, systematic approach for obtaining information about the world. Quantitative research is used to describe new situations and determine relationships between concepts or ideas (Burns & Grove 2005:23).

1.7.1 Research design

A research design is a "plan for carrying out research in order to answer relevant questions" (Mouton 2001:55). The quantitative descriptive design was used in this study to describe the factors that altered the HIV positive clients' commitment to exclusive breastfeeding. The research discovers new meaning, describes what exists and discovers the frequency with which something occurs (Burns & Grove 2005:23) (see chapter 3).

1.7.2 Population

A population is a set of individuals who meet the sampling criteria, and sampling involves selecting a group of people with which to conduct a study (Burns & Grove 2005:342). The study was conducted at George Mukhari Hospital postnatal clinic. The babies of HIV+ mothers are brought to the Paediatric Outpatients Department to have blood taken for the Polymerase Chain Reaction test to determine if babies are infected with HIV. The facility was chosen because it is a referral centre where HIV positive clients are cared for during pregnancy and labour and where the PMTCT programme is

offered. The population for this study is therefore postnatal clients who attended PMTCT at George Mukhari Hospital.

1.7.3 Sampling and sample

- **Definition of sample**

Sampling is the process of selecting elements or respondents representative of the populations under study (Polit & Beck 2004:291). The proportion of the subjects selected from accessible population from which information for the study is obtained is referred to as the sample. A sample should be representative of the population from which it is selected to enable generalisation of finding to be made about that population (Babbie & Mouton 2001:124). Accordingly, the sample consisted of HIV positive clients who met the eligibility criteria.

The sample size adequacy was determined by using power analysis, which considered the capacity of the study to detect differences or relationships that exist in the population (Burns & Grove 2005:358). The sample was drawn from the target population.

A non-probability sampling design using a convenient sampling method was used to select the sample. In convenience sampling, participants are included in the study because they are in the right place at the right time (Burns & Grove 2005:350; Polit & Beck 2004:715).

Although HIV positive clients who showed evidence of altered commitment to exclusive breastfeeding were included in the study because they happened to be in the right place at the right time, the researcher consciously selected HIV positive postnatal clients (see chapter 3).

Burns and Grove (2005:342) define sampling criteria as a list of characteristics that are important for inclusion in the population. In this study the criteria included the following:

- Having undergone the PMTCT programme during pregnancy
- Having proved HIV positive on testing

- Having decided to breastfeed exclusively during the post-testing counselling sessions and subsequently not remaining committed to this decision

The selection would be made using records from labour wards, postnatal wards and referrals from peripheral clinics of HIV positive women who had undergone the PMTCT programme and the records at the Paediatric Outpatients Department, using the inclusion criteria.

1.7.4 Setting /the context

Polit and Beck (2004:28) define a setting as a specific place where data collection occurs. The site for the study is George Mukhari Hospital, located near Ga Rankuwa Township in the northern part of Gauteng in South Africa. This is a level 3 referral academic hospital that caters for the population of the whole region and is situated near Rosslyn.

The hospital was chosen because it offered PMTCT, VCT and anti-retroviral drugs in pregnancy. The antenatal and postnatal clinics at the hospital had facilities for Voluntary Counselling and Testing and the PMTCT programme in which the anti-retroviral Nevirapine is given to pregnant HIV positive clients for self administration when labour pains start. All clients who deliver babies in hospital and are without complications are referred to peripheral clinics for postnatal follow-up.

The HIV positive clients are referred to the hospital Paediatric Outpatients on Fridays for the screening of babies for HIV at a 6 weeks postnatal follow-up. According to the 2004/2005 Department of Health annual report, the PMTCT programme operated in all 22 hospitals and 22 community health centres with obstetric units. This included 63% of the clinics that offered antenatal care in Gauteng Province (South Africa. Department of Health 2004:55).

The setting for this study was naturalistic, in a place where HIV testing, counselling and anti-retroviral administration takes place. A naturalistic setting is a real-life situation where nature takes its course without any interference (Burns & Grove 2005:326). No control or manipulation was imposed during this study.

South Africa has nine provinces, each having a department of health at provincial level. Gauteng province is divided into six regions. They are Johannesburg Metro, West Rand, Ekurhuleni, Sedibeng and Central Tshwane/Metsweding Region. The George Mukhari Hospital falls under the Tshwane/Metsweding region, where the study was done.

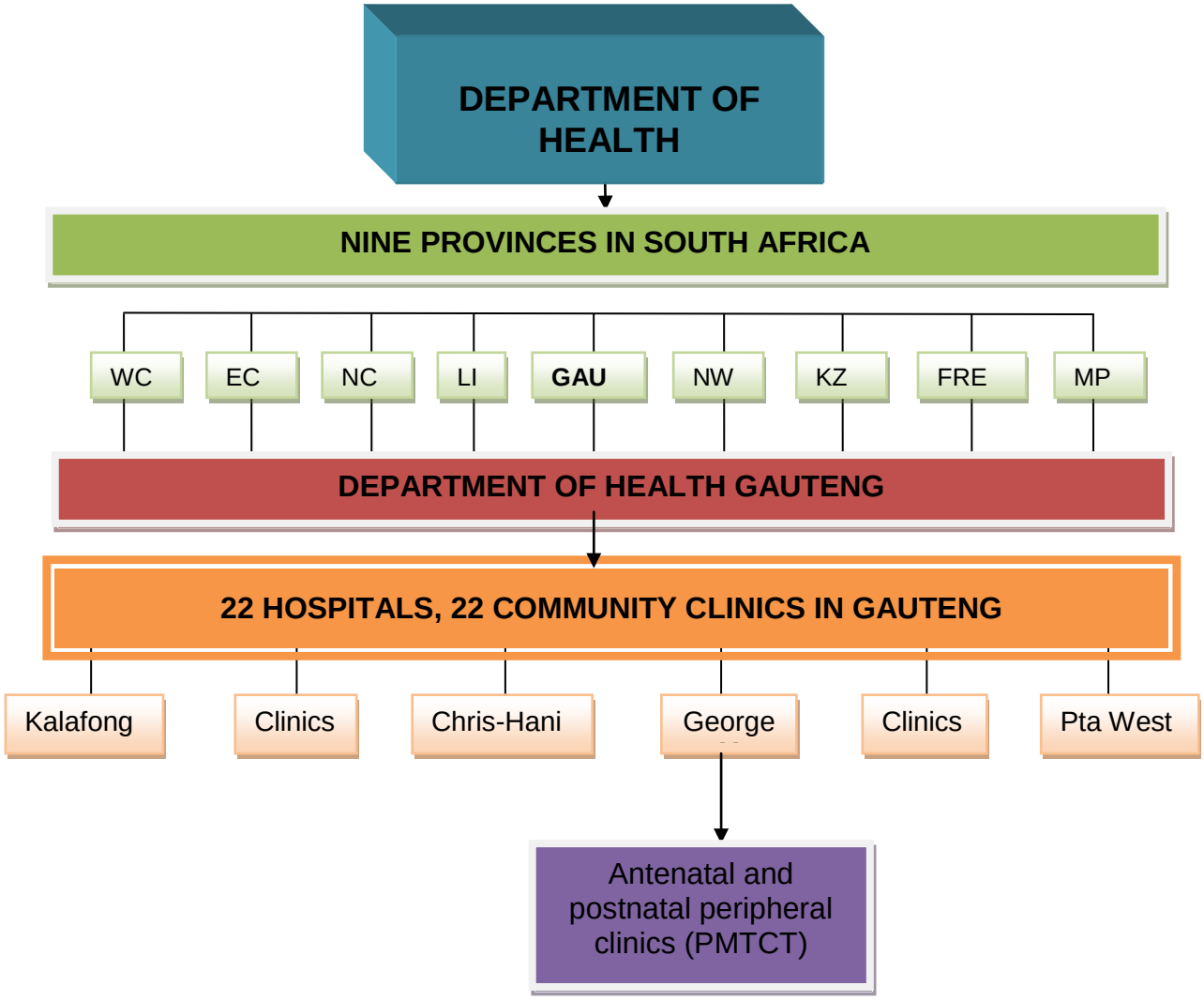

Figure 1.1 Map outlining PMTCT services offered in Gauteng

1.7.5 Data collection

Data gathering is the process of reaching the subjects and collecting data for the study (Burns & Grove 2005:430). Data were collected using a structured pre-tested interview schedule. The researcher administered the interview schedule.

The researcher collecting structured self-report data uses a formal, written instrument called the structured interview schedule for face-face interviews (Polit & Beck 2004:349). Data collection in quantitative research usually requires a structured plan indicating the information to be gathered. Structured interviews are preferred in order to provide quantifiable data for statistical data analysis (Polit & Hungler 1999:310).

The researcher collected data from clients during personal interviews using a structured interview schedule, as some questions needed to be clarified and some clients could not read or write. A structured interview schedule enables the investigator "to be consistent in asking questions and data yielded are easy to analyse" (Polit & Beck 2004:349) (see chapter 3).

Data collection for the study was done after pre-testing the instrument. Compilation of the instrument was based on the information gathered during the literature search and was submitted to experts in obstetrics and the supervisor and joint supervisor of the study for comment (see chapter 3).

1.7.6 Data analysis

Data analysis is defined as a mechanism for reducing and organising data to produce findings that require interpretation by the researcher (Burns & Grove 2005:452).

1.7.6.1 Data analysis methods

Data were encoded and computerised using the Statistical Package for Social Sciences (SPSS) version 13.0 with the help of a statistician. Descriptive and inferential statistics were used in the data analysis and summaries included frequencies and percentages.

1.7.7 Validity and reliability

To ensure the quality of data collection instruments it is important to establish their validity and reliability (refer to chapter 3).

1.7.7.1 Validity

Validity refers to the degree to which a test or instrument measures what it purports to measure (Burns & Grove 2005:754). The content and face validity of the instruments used in this study were accepted by experts in the field of PMTCT counselling as being relevant to identify factors that alter clients' commitment to exclusive breastfeeding. Experts in HIV and AIDS from the Department of Health in Gauteng were also requested to evaluate the validity of the structured interview schedule.

1.7.7.2 Reliability

The reliability of the structured interview, pertaining to the consistency with which it tested the reasons for altered commitment to exclusive breastfeeding by HIV positive clients, was addressed.

1.7.8 Pre-test

The pre-test assesses adequacy of the data collection process and determines the weaknesses that may occur in the main study (Polit & Beck 2004:328). A pre-test is a smaller version of the study, carried out to obtain information to improve the structured interview schedule and to assess the feasibility of the study. The respondents in the pre-test were ten and they were similar to those in the study and it was done under similar settings, but they were not included in the final study.

Conducting a pre-study assisted the investigator to identify problems with the structured interview schedule. It also gave an estimate of the time needed to interview each individual, which was important in obtaining consent to participate (Polit & Beck 2004:328).

1.8 SCOPE AND LIMITATIONS OF THE STUDY

Burns and Grove (2005:39) describe limitations of the study as restrictions in a study that may decrease the generalisability of the findings. The two types of limitation are theoretical and methodological.

Theoretical limitations restrict abstract generalisability or transferability of findings. Methodological limitations restrict the population to which findings can be generalised or transferred (Burns & Grove 2005:40).

In this study the respondents were obtained at the George Mukhari Hospital Obstetric wards and Paediatric Outpatients department and were limited to this area, thus limiting transferability and generalisability of the findings nationally.

1.9 ETHICAL CONSIDERATIONS

Ethical measures are as important in quantitative research as in qualitative research and include ethical conduct towards participants' information as well as honest reporting of the results.

Pera and Van Tonder (2005:4) define ethics as a "code of behaviour considered correct". The following principles were considered in this study: permission to conduct the study, respect of persons as autonomous individuals, confidentiality and anonymity, avoiding harm, dissemination of results benefit versus risk, researcher participant relationships, justice and informed consent, researching sensitive issues and the right to withdraw from the study (see chapter 3, section 3).

1.10 DEFINITION OF TERMS

1.10.1 Prevention of mother-to-child transmission

Mother-to-child transmission (MTCT) is the transmission of HIV from an HIV-infected mother to her infant. It can occur during pregnancy, labour delivery and after birth through breastfeeding (South Africa. Department of Health 2008:8).

1.10.2 Prevention of mother-to-child transmission programme

This was a programme arranged by the South African Government to reduce mother to child transmission of HIV and AIDS. It included Voluntary Confidential Counselling and Testing and administration of an anti-retroviral drug called Nevirapine to the mother who tested HIV+, irrespective of the CD4 count. The Nevirapine 200 mg tablet is given to the

HIV positive client at 28 weeks gestational period to be self-administered at the onset of labour or rupture of membranes. The infants born to infected women on the programme will receive a single dose of Nevirapine syrup – 0,2 ml if the baby's weight is below 2000g and 0,6 ml if the baby's weight is above 2 000 g – within 72 hours after birth. In addition to the PMTCT programme, routine antenatal care is also rendered at the antenatal clinic (South Africa. Department of Health 2008:44).

1.10.3 Pre-test counselling session

This is an information session on HIV/AIDS and PMTCT related issues for clients who attend antenatal clinics for antenatal services and/or follow-up postnatal visits. The initial session is conducted in group form, involving all the pregnant clients who have come to the clinic for the first time; then the individual sessions with a client and counselling follow. The counsellor conducts private individual sessions with individual pregnant clients after the group session, where an agreement is reached prior to testing for HIV. This is a requirement by the government for inclusion in the programme. The client may be allowed to consider testing which may be done during the next visit or the same day if she is ready (South Africa. Department of Health 2001:9).

1.10.4 Post-test counselling session

This session is conducted after the client has agreed to go for HIV testing. The session is held with an individual client after the blood results for HIV testing are obtained. It is done when the client is still pregnant, whether the results are positive or negative. Counselling involves information about anti-retroviral therapy, feeding options available, partner testing, information and referral to support services and positive lifestyle. Counselling and moral support of infected clients continues throughout labour and puerperium. Clients that are not infected are counselled on prevention of future infections even in pregnancy and the importance of exclusive breastfeeding for adequate infant care (South Africa. Department of Health 2008:38).

1.10.5 Voluntary confidential counselling and testing (VCCT)

Voluntary confidential counselling and testing (VCCT) refers to the first step in the PMTCT programme, whereby clients attending an antenatal clinic are informed about preventative measures of HIV transmission, and this includes counselling and testing for HIV. The information is given in a group and later in individualised sessions (South Africa. Department of Health 2001:9).

1.10.6 Exclusive breastfeeding (EBF)

This refers to giving an infant no other food or drink (not even water) apart from breast milk (including expressed milk fed with a cup), with the exception of drops or syrup consisting of vitamins, mineral supplements or medicines when medically prescribed (South Africa. Department of Health 2008:9).

1.10.7 Human Immunodeficiency Virus (HIV)

This refers to the Human Immunodeficiency Virus (HIV) that targets the T-helper cells and CD4 lymphocytes of the immune system, suppressing the body's defence mechanisms with increased risk of opportunistic diseases (Fraser, Cooper & Nolte 2006:364; De Kock & Van der Walt 2004:19-2).

1.10.8 Factor

A factor is defined as a circumstance, a fact or influence contributing to a result (*Concise Oxford Dictionary* 1995:482). For this study the factors that may have altered HIV-infected clients' commitment to exclusive breastfeeding were investigated.

1.10.9 Postnatal clients

These are women that have delivered for a period of not less than 10 days and no more than 28 days after the end of labour. If there are no complications they are seen six weeks after delivery at a designated postnatal clinic (Fraser et al 2006:980).

1.10.10 Puerperium

The puerperium is the period from completion of delivery of the placenta and membranes to the end of the first six weeks postpartum when the woman's body returns to the non pregnant state (Fraser et al 2006:612).

1.10.11 Midwife

A midwife is defined by World Health Organization (WHO) as a person who has successfully completed the prescribed course of studies in Midwifery and has acquired the required qualification to practice midwifery legally. She/he must be able to give the necessary supervision, care and advice to women during pregnancy, labour and the postpartum period (Fraser et al 2006:5).

1.10.12 Antenatal care

This refers to the care that is given to the expectant mother from the time that conception is confirmed until the beginning of labour (Bennet & Brown 2000:209).

1.10.13 Seroconversion

This refers to a point at which a person's status changes from being HIV negative to being HIV positive after being infected (Van Dyk 2005:40).

1.10.14 Polymerase chain reaction test

This refers to an HIV test where the ribonucleic and deoxyribonucleic acid of the genetic material is amplified to confirm the disease where other tests could not determine the diagnosis (Gilbert & Harmon 1998:635).

1.11 ABBREVIATIONS

3TC	Lamivudine
AZT	Zidovudine
AIDS	Acquired Immune Deficiency Syndrome
ARV	Anti Retroviral Treatment
EBF	Exclusive Breastfeeding
HAART	Highly Active Anti Retroviral Therapy
HIV	Human Immunodeficiency Virus
MTCT	Mother-to-child transmission
PCR	Polymerase Chain Reaction Test
PMTCT	Prevention of Mother-to-Child Transmission
VCT	Voluntary Counselling and Testing
VCCT	Voluntary Confidential Counselling and Testing

1.12 ORGANISATION OF THE REPORT

Chapter 1 presents the introduction to and background of the study. It includes the problem statement, purpose of the study, significance of the study and research question. It introduces the methodology for the study, scope and limitations, ethical considerations, definition of terms used in the study and gives an outline of the study.

Chapter 2 reviews the related literature pertaining to the study.

Chapter 3 outlines the research methodology used in the study.

Chapter 4 presents a discussion of data analyses and findings obtained from the completed questionnaires.

Chapter 5 presents the summary and conclusion, and recommendations for future research.

1.12 SUMMARY

Chapter 1 introduced the background of the study on the factors that alter HIV and AIDS postnatal clients' commitment to exclusive breastfeeding. It also provided an overview of the study, its design, purpose, limitations and the assumptions underlying the study. The literature study is presented in chapter 2.

CHAPTER 2

Literature study

2.1 INTRODUCTION

A literature study “lays the foundation of a study and enables the researcher to discover what is known or not known about the topic of interest in order to conduct research that adds to the body of knowledge” (Polit & Beck 2004:88).

This chapter deals with the search for, and review of literature relevant to the research topic: the factors altering HIV and AIDS postnatal clients’ commitment to exclusive breastfeeding, and related terms. It contains information on the research topic and methodological issues pertaining to the research topic.

2.2 PURPOSE OF A LITERATURE STUDY

The purpose of a literature study is to gain knowledge about the research topic and about studies already conducted by other researchers on similar topics. Findings from previous studies assist researchers in refining parts of their studies, especially with regard to the problem statement, design and data analysis process. They assist by providing a basis for comparison when interpreting findings of the current study (Brink, Van der Walt & Van Rensburg 2006:67).

The study of literature on exclusive breastfeeding and prevention of mother-to-child transmission of HIV assisted the researcher to focus on the problem and formulate an appropriate research question, as stated in chapter 1.

During the present literature study, the researcher was also alerted to unresolved research efforts regarding the research topic – the factors altering HIV and AIDS postnatal clients’ commitment to exclusive breastfeeding – as suggested by Polit and Beck (2004:88). In addition, the researcher was able to obtain clues as to the methodology and instruments used by other researchers.

The information provided the researcher with knowledge as to what had been tried, and with knowledge about shortcomings that were identified in approaches and methods used during previous research into the factors altering HIV and AIDS postnatal clients' commitment to exclusive breastfeeding (Brink et al 2006:63).

The result of this section of the literature study is discussed in chapter 3.The discussion that follows focuses mainly on the research topic: factors altering HIV and AIDS postnatal clients' commitment to exclusive breastfeeding.

2.3 CONCEPTS RELATED TO HIV AND AIDS POSITIVE CLIENTS AND EXCLUSIVE BREASTFEEDING

The review of the literature revealed the following significant concepts related to the research topic: factors altering HIV and AIDS postnatal clients' commitment to exclusive breastfeeding:

- HIV and AIDS in pregnancy
- Prevention of mother-to-child transmission
- Exclusive breastfeeding
- Anti retroviral drugs
- Non-compliance

A discussion of each of these aspects follows. These discussions refer pertinently to the definitions, characteristics, descriptions and processes involved and the outcomes of these phenomena.

2.3.1 HIV and AIDS in pregnancy

According to Evian (2003:211), pregnancy does not have significant effects on the progress of HIV disease in the early symptomatic phase, but pregnancy might affect women with advanced HIV leading to AIDS. He states that some reports from Africa suggest that the HIV infection may cause intra-uterine growth retardation, prematurity, stillbirths and congenital infections (Evian 2003:211; Van Dyk 2005:31).

Fraser et al (2006:365) state that in patients having AIDS the pregnancy might lead to rapid progression of the disease with loss of immune function. The disease is associated with other sexually transmitted infections like candida vaginitis, which is resistant to common treatment. There is an increase in the incidence of urinary tract infections, stillbirths, placenta abruptio, chorioamnionitis and ectopic pregnancies in HIV positive women.

2.4 VOLUNTARY COUNSELLING AND TESTING (VCT)

VCT forms part of the strategy for the prevention of mother-to-child transmission of HIV and forms the main mechanism through which people requiring antiretroviral drugs will be identified (South Africa. Department of Health 2001:5). People are given an informed choice to remain HIV negative or live positively if they have the virus due to the counselling and support provided by health workers and support groups (Voluntary counselling … 2004:25).

The focus of the Prevention of Mother to Child Transmission (PMTCT) of HIV, outlined in the Policy and Guidelines for the Implementation of PMTCT Programme, focuses on the primary prevention of HIV, the provision of antenatal care to pregnant women, and management during labour and delivery, including care during puerperium for the women (South Africa. Department of Health 2007b:16).

The VCT service was introduced to pregnant women who came for routine antenatal care and follow-up, as explained in the background of the study. This service is preferably given at the initial visit. According to the Policy and Guidelines for Implementation of the PMTCT Programme, partner involvement in the counselling and mutual disclosure of the HIV status was encouraged to provide better comprehensive care by the Department of Health (South Africa. Department of Health 2007b:14).

The South African approved government hospitals and clinics offer PMTCT services according to the following guidelines stated in the PMTCT policy:

2.4.1 Pre-test group information session

The staff members conduct group information sessions on HIV and PMTCT strategies for women booking at antenatal services or follow-up. The information session is on HIV transmission and how to prevent mother-to-child transmission of the virus, HIV rapid testing process and discussions on confidentiality and couple counselling. Issues like implications of negative or positive results, stigma related to the disease, the window period, and benefits to the mother and the baby are discussed during the group information session (South Africa. Department of Health 2007b:32).

2.4.2 Individual pre-test counselling session

After the group session the woman is individually counselled in private. The understanding of the information discussed in the group session is evaluated and clarity provided where needed. The options for enrolling in the programme are that the woman can be counselled, tested and get results on the same day or during a subsequent visit. She can also be counselled and tested at the next visit or decide not to enrol in the programme (South Africa. Department of Health 2007b:32).

2.4.3 Testing

Professional nurses trained in HIV testing and counselling do rapid testing to determine the HIV status and including routine antenatal testing for haemoglobin, Rhesus factor and syphilis after obtaining written consent from the client. If she tests negative, no further tests will be done until a repeat HIV test at 34 weeks gestation to detect late seroconverters. If she tests positive, a second different rapid test is done to confirm her status. She will be considered HIV positive if the second test is positive. If the first test is positive and the second test is negative the blood will be sent for an ELISA test to get final results. The results are kept confidential and recorded in the register and a written statement is given to the counsellor who did the pre-test counselling. The woman will get a written statement of results from the counsellor during the post-test counselling session. Following testing. all HIV positive women should have a CD4 count done and be screened for tuberculosis and assessed according to the WHO clinical staging guidelines. The women who have missed testing during the initial visit will be tested on the next visit if they give consent (South Africa. Department of Health 2007b:33).

2.4.4 Post-test counselling and education

Women who test HIV negative are counselled on the prevention of future infection, high-risk transmission if infected in pregnancy or during breastfeeding and the importance of exclusive breastfeeding and partner testing. The possibility of a window period is considered. HIV negative women are invited for a repeat test at around 34 weeks gestation if they were tested early in pregnancy (South Africa. Department of Health 2007b:38).

The women who test HIV positive are assessed according to WHO clinical staging guidelines. The women have their CD4 count determined, preferably on the same day as getting HIV results. The women who are in WHO stage 4 should be considered for antiretroviral therapy, counselling on feeding options available, including the risks and benefits of formula and breastfeeding, information on future fertility, partner testing and referral for social and psychological support. Counselling is offered at every subsequent visit to assist in coping with the disease (South Africa. Department of Health 2007b:38).

2.4.5 Nutritional supplements

According to the Department of Health (South Africa. Department of Health 2007b:41), HIV positive women who are on the programme are offered routine nutritional supplements like folic acid 5mg and ferrous sulphate 200mg daily, and Vitamin A, as required by the World Health Organization. In cases of advanced HIV where muscle wasting and poor weight gain are evident, nutritional supplements and fortified porridge should be provided (South Africa. Department of Health 2007b:41).

2.4.6 Antiretroviral therapy

In South Africa the women with advanced HIV who meet the criteria according to the Department of Health start on Highly Active Anti Retroviral Therapy (HAART) to delay progression of the disease, according to the Treatment Strategy (South Africa. Department of Health 2007b:41).

In pregnancy Zidovudine (AZT) is prescribed by a registered health professional at or later than 28 weeks according to the legislation, unless the patient is anaemic, with

haemoglobin of less than 7 g/dl. A woman with severe anaemia is managed by the doctor prior to starting on anti retroviral therapy. AZT Toxicity is monitored throughout therapy (South Africa. Department of Health 2007b:41).

In South Africa Nevirapine is the drug of choice when the woman is in labour and is administered as follows, irrespective of the CD4 count:

- All HIV positive pregnant women get a Nevirapine 200mg tablet after 28 weeks gestation to be self administered at the onset of labour or when membranes rupture. If labour is prolonged for 24 hours, the tablet is re-administered or in the case of false labour another tablet is offered to the woman to be administered when in labour (South Africa. Department of Health 2007b:42).
- All infants born of HIV positive mothers get a single dose of Nevirapine oral suspension within 72 hours after birth. The dosage is 0.2ml/kg if baby's weight is less than 2000g and 0.6ml/kg if weight is greater than 2000g.
- Unbooked women who come to the postnatal clinic within 72 hours post delivery for counselling and test HIV positive will have Nevirapine administered to their babies (South Africa. Department of Health 2007b:42).
- If the mother only received a short course of Nevirapine or had less than 4 weeks of AZT, the infant will get a short duration Nevirapine and 28 days of AZT (South Africa. Department of Health 2007b:42).

2.4.7 Safe feeding practices

Safe feeding practices are discussed at the prenatal and post-test counselling sessions. The infected woman who chooses exclusive breastfeeding will be advised on how the baby should latch to the breast to avoid cracked nipples and mastitis, which can increase the chances of transmission of the virus to the infant. Exclusive breastfeeding should be done on demand for 4 months and the infant should be abruptly weaned. Demand feeding means that there are no scheduled times for meals and the baby is breastfed whenever it is hungry. The woman will be provided with formula feeds for two months while solids are introduced (South Africa. Department of Health 2007b:14).

2.4.8 Barriers to provision of VCT Services

According to an article on Voluntary counselling and testing (2004:25) the fear of the stigma attached to HIV and AIDS is a barrier to adequate use of the VCT services. Discrimination associated with the disease is also a barrier, especially in the workplace. Fear of breach of confidentiality by the health providers and counsellors is cited as a reason for non-acceptance of the service. The optimal use of VCT services can be achieved by considering the needs and cultural practices of the community being served, as evident from Kenya, where provision was made for deaf clients, which led to good results (Voluntary counselling … 2004:25).

2.5 PREVENTION OF MOTHER-TO-CHILD TRANSMISSION

Mother-to-child transmission of the HIV refers to vertical transmission that can occur during pregnancy, labour or after delivery through breastfeeding (Thorne & Newell 2003:447).

In 2000 the United Nations General Assembly made a Declaration of Commitment on HIV and AIDS within its Millennium Goals. The target included a 25% reduction in the percentage of HIV infected women aged 15-25 years by 2010, and a 20% reduction in infant HIV infection by 2005 and 50% by 2010 (Thorne & Newell 2003:447).

The risk factors for postnatal transmission of the HIV to the baby include maternal anaemia, low maternal CD4 count and poor maternal nutrition and it was suggested that the CD4 count of the women be determined during pregnancy, and antiretroviral treatment be administered during pregnancy to reduce postnatal transmission (Barclay & Lie 2005:699-708).

The strategies for prevention of the infection included the reduction of maternal viral load, avoidance of exposure to maternal blood and cervical secretions and boosting the infant's ability to clear or resist the HIV (Thorne & Newell 2003:451).

Van Dyk (2005:31) states that 23% of HIV transmission from mother-to-child occurs in the uterus during the first trimester. The infection of the baby is more likely to occur if the mother became infected just before or during pregnancy or if the mother has AIDS.

This occurs due to the high viral load of more than 50 000 viral particles or the low CD4 count of less than 200cells/mm³.

The preventative measures of mother-to-child transmission of HIV include the following:

2.5.1 Prophylactic drugs

2.5.1.1 Antiretroviral drugs (ARV)

The AIDS Clinical Trials Group 076 Protocol was followed in the United States in 2002 for the prevention of vertical transmission of HIV-1 (Kourtis 2002:2214). Zidovudine was administered to pregnant women with a CD 4 count of greater than 200/mm² who were asymptomatic. Zidovudine was administered to the women at 14-34 weeks of gestation and continued up to delivery and to the infant for 6 weeks post delivery. Transmission rate was reduced by 66%. Zidovudine 100 mg was given rally 5 times daily to the women during pregnancy. During labour the woman was given 2 mg/kg body weight over one hour then 1 mg/kg hourly until delivery. The infant received oral Zidovudine 2 mg/kg 4 times daily for 6 weeks as from 8-12 hours after birth. The women did not breastfeed. A side effect of this regime was that the infants had transient anaemia. The Zidovudine regime was found to be complex and expensive, hence Nevirapine was introduced (Kourtis 2002:2214).

Nevirapine was used in Uganda for a trial in which breastfeeding was predominant. It was introduced as a single-dose therapy as it had a long half-life in infected pregnant women during labour and in the neonates. A single oral dose of Nevirapine 200 mg was administered to the woman at the onset of labour and 2 mg/kg oral suspension to the baby within 72 hours of birth prior to discharge. Transmission rate of HIV was reduced by 47% within the first 4 months. Nevirapine was recommended for developing countries where HIV prevalence was high (Kourtis 2002:2216).

Zidovudine and Lamivudine combinations were trialled in Africa, where they were administered at 36 weeks gestational period to the pregnant woman and to the neonate for one week. The transmission reduction was 63% compared with a placebo. When administered during labour, transmission rate was decreased by 42%. Oral Zidovudine 300 mg to 600 mg was administered at labour onset, then 300 mg 3 hourly until

delivery and 4 mg/kg every 12 hours for one week to the neonate. Lamivudine was administered orally 150 mg twice daily during labour and for one week after delivery to the mother, then 2 mg/kg every 12 hours to the neonate for one week. The benefit of the intervention was diminished at the 18 months follow-up of the breastfed infants. Side effects to the neonate included severe anaemia, liver abnormalities and mitochondrial dysfunction (Kourtis 2002:2218).

According to the 2005 South African Progress Report on Commitment on HIV and AIDS presented at the United Nations General Assembly (South Africa. Department of Health 2006:21), 78.7% of HIV positive tested pregnant women received prophylactic Nevirapine. Research has not yet been done on the number of children that have been saved as a result of the intervention.

The World Health Organization (WHO 2006:30) came up with a few recommendations for the prevention of HIV infection in infants among women seen during pregnancy. The recommendations are:

- Level A1. Administration of AZT to women from 28 weeks of pregnancy. AZT plus 3TC and Nevirapine are administered to women intrapartum and for seven days postpartum to reduce viral drug resistance when Nevirapine is given alone or in combination with AZT. If the mother received less than 4 weeks of AZT before delivery, the AZT dose of the infant should extend for 4 weeks.
- Level C1. Omission of Nevirapine for women who receive at least 4 weeks of AZT before delivery.
- Level A11. Nevirapine given to the infant up to 72 hours after childbirth.
- Level A1. When delivery occurs within two hours of the woman taking Nevirapine the infant should receive Nevirapine immediately after delivery and AZT for 4 weeks (WHO 2006: 32).

The South African Government adapted the antiretroviral regime for pregnant women as described under Voluntary Counselling and Testing.

2.5.1.2 Microbicides

According to Kriebs (2002:6) and Thorne & Newell (2003:456), the disinfection of the birth canal with Chlorohexidine to prevent exposure of the infant to cervico-vaginal secretions in vaginal deliveries was recommended in high prevalence areas where HIV testing was not done and resources were poor. Chlorohexidine is said to neutralise the HIV and is tolerated by most women as vaginal lavage. This was done in Malawi in the 1990s before antiretroviral therapy was used. Findings are that there is no significant difference in transmission of HIV except in women with ruptured membranes for more than 4 hours (Kriebs 2002:6).

2.5.1.3 Vitamin therapy

Another preventative measure of mother-to-child transmission of the HIV is to administer Vitamin A supplements to the HIV infected women to boost the immune system. A randomised trial was done in South Africa among pregnant women in 1998 at King Edward and McCord Hospitals (Coutsoudis et al 1999:471-476).The women started treatment of Vitamin A from 28-32 weeks of gestation. The findings were that there was no effect on the transmission rate even when multiple vitamins were administered, but the benefits included improved birth weight and decreased foetal loss at 6 weeks postnatal follow-up (Kriebs 2002:6; Thorne & Newell 2003:456; Coutsoudis et al 1999:471-476).

A Vzitambo randomised study was done in Zimbabwe and the results indicated that the administration of Vitamin A had no effect on the postnatal transmission of HIV to the baby in mothers who practised breastfeeding (Burrowes 2004:1).

2.6 INFANT FEEDING

According to the Department of Health policy guidelines (South Africa. Department of Health [Sa] b:4), South Africa has a high infant mortality rate of 100 deaths per 1000 live births in very under-resourced areas when compared with developed countries. The major contributing factors to infant mortality, especially in lower socio-economic areas, are diarrhoeal disease, respiratory tract infection and malnutrition. The incidence of malnutrition and diarrhoeal disease is directly related to access to safe clean water

and sanitation and adequate nutrition. In these situations infant formula, especially via feeding bottles, is dangerous and breastfeeding is the preferred option for the well-being of many infants in South Africa (South Africa. Department of Health [Sa]b:4).

According to Latham and Preble (2000:1656-1660), data from developing countries show that mortality from diarrhoea, acute respiratory infections and other infectious diseases is five or six times higher in infants who are not breastfed than in those who are breastfed for the first two months of life.

2.6.1 Infant feeding patterns

According to the Department of Health guidelines (South Africa. Department of Health [Sa]b:3), the following infant feeding patterns are recommended:

REPLACEMENT FEEDING is the process of feeding a child who is not receiving any breast milk with a diet that provides all the nutrients that the child needs.

Replacement feeding can be divided into the following options:

- **Commercial infant formula** that is designed to meet the nutritional needs of the infant for the first 4-6 months of life. It may be made from cows' milk or from vegetable products such as soya protein. Approximately 20kg of this formula is needed for feeding infants in the first 6 months of life (South Africa. Department of Health [Sa]b:3).
- **Home-prepared formula** can be prepared from fresh cow's, goat's or sheep's milk. These fluids are different from human milk and may not provide enough micronutrients, especially iron, zinc and vitamins A & C and folate. Cows' milk can be modified for infants by mixing 50ml of water for each 100ml of milk and adding 10g of sugar. Micronutrient supplementation will also be needed (South Africa. Department of Health [Sa]b:3).
- **Powdered full-cream milk and evaporated milk**. These can be modified in a similar way to fresh milk and addition of micronutrients is needed (South Africa. Department of Health [Sa]b:3).

From six months to two years. Replacement feeding for a non-breastfed infant should preferably continue to include a suitable breast milk substitute and complementary foods made from appropriately prepared and nutritionally enriched family foods given *three* times a day. If breast milk substitutes are not available, then appropriately prepared and nutritionally enriched family foods should be given *five* times a day (South Africa. Department of Health [Sa]b:3)

COMPLEMENTARY FEEDS are infant feeds that are given in addition to breastfeeding; also called mixed feeding.

2.6.2 The role of culture in infant feeding

According to Longmore (1959:153), Zulu tribal women took two years or more to breastfeed. A man would cohabit with another of his wives when one was breastfeeding as having sexual relations during breastfeeding was believed to make the breast milk poisonous for the baby. Among urban Africans in Johannesburg, when a baby died the death would be attributed to the parents' lack of decent sexual habits, mainly blaming the mothers who were breastfeeding (Longmore 1959:243; Helman 2007: 396).

South African urban mothers in Johannesburg would introduce cereals and bottle feeding using fresh cow milk or powder earlier, as the women stopped breastfeeding to return to their jobs after confinement (Longmore 1959:154).

The African belief was that the milk was not enough to make the baby grow and therefore other liquid food was forced into the baby's mouth. It was common in urban areas to introduce other foods to a month-old baby (Longmore 1959: 243). There are constant clashes between the mother and the in-laws when the mother follows the clinic routine, as the in-laws accuse the mother of starving their son's baby to death (Longmore 1959:243).

Longmore commented that the media have an effect on infant feeding, as new products were introduced and advertised and were given to newborn babies that were breastfed (Longmore 1959:243).

Helman (2007:69) maintains that according to the 1984 World Fertility Survey, breastfeeding practices have declined in urban and industrialised societies, whereas rural women in the developing countries breastfeed 2-6 months longer than urban women. A reverse trend has been observed recently, in that there is a gradual return to breastfeeding among mothers in the upper socio-economic classes (Helman 2007:70).

Latham and Preble (2000:1656-1660) state that in African communities like Kenya breastfeeding has fertility implications as it is practised for two years and used for spacing of children. This might affect choice of infant feeding.

A participatory action research was done by the Rural Health Initiative in a Bapong village in South Africa in 2001 (An interactive experience … 2004:1). The study was done to determine health perceptions of the community about child health before implementation of the Integrated Management of Childhood Illnesses Programme (IMCI) in the village. A cultural belief that came up was that if the parents have sexual relations when the mother is still breastfeeding the child may develop a bulging fontanelle and be ill. Mothers who were breastfeeding were not allowed to attend funerals or travel as the milk might become “dirty” and would make the child ill. These cultural practices have an effect on the breastfeeding duration and affect adherence to exclusive breastfeeding, as some mothers may need to get to work or travel (An interactive experience … 2004:3).

Helman (2007:70) states that there have been changes in the breastfeeding patterns in sub-Saharan Africa, where HIV positive women are being advised not to breastfeed as half of mother-to-child transmissions of HIV occur during breastfeeding.

All these cultural practices have an impact on the choice of infant feeding for the HIV positive woman as she lives within the community.

2.6.3 Choices of infant feeding

Counselling and support is given to an HIV positive client and partner during post-test sessions of PMTCT. Clear information on the risks of mother-to-child transmission of HIV is given and the couple is helped to make an informed choice for infant feeding (South Africa. Department of Health [Sa]c:7; South Africa 2007:53).

According to Keke (2005:2), disclosure of the HIV status to the partner is important as there are many couples that co-habit and the partner assists with the upbringing of children. The women are financially and emotionally dependent on these partners. The woman may be coerced to disclose her HIV status if she chooses not to breastfeed. According to Du Plessis (2005:1), the HIV positive woman may fear the negative outcome of disclosure, which may be rejection by the partner; this affects her choice of infant feeding if the partner prefers breastfeeding.

2.6.4 Infant feeding for HIV positive mothers

Jaspan and Garry (2003:324) cite the fact that HIV-1 transmission through breastfeeding is between 14% and 28% and the risk is cumulative, though risk of exposure decreases over time because colostrum is higher in viral load than later milk. Breastfeeding is recommended in developing countries with limited resources due to lack of finances for formula feeding. Bennet and Brown (2000:345) also recommend that breastfeeding be practised in areas with high infant mortality due to lack of adequate sanitation.

Thorne and Newell (2003:457) recommend exclusive breastfeeding and early weaning to reduce the exposure of the baby to the virus. Exclusive breastfeeding for 6 months was recommended to reduce infant mortality due to diarrhoea (Health benefits … 2003:1); after this time the baby will start on solids. Burrowes (2004:1) states that breastfeeding for 3 months is associated with a lower risk of mother-to-child transmission than mixed feeding with breast milk and other solids and liquids: 68% of postnatal transmission of HIV occurred when infants were breastfed more than 6 months (Burrowes 2004:2).

The Department of Health states in its Infant and Young Child Feeding Policy (2007a:13) that all pregnant women should be educated on exclusive breastfeeding for 6 months and continue breastfeeding until 2 years with complementary feeding, unless there are medical contraindications. The women have to be provided with objective evidence-based infant feeding information to make an informed decision (South Africa. Department of Health 2007a:13).

HIV positive mothers should be individually counselled on infant feeding options to make informed choices that are most suited for their circumstances (South Africa. Department of Health 2007a:14; Health benefits … 2003:1)). Exclusive breastfeeding is recommended for HIV positive clients for the first 6 months of life unless replacement feeding is acceptable, feasible, affordable, sustainable and safe (South Africa. Department of Health 2007a:14).

Coutsoudis et al (1999:12) recommend that HIV positive mothers be advised to exclusively breastfeed for 3 months, while being counselled and supported to minimise the chances of infecting the baby with HIV, whereas the Department of Health recommends exclusive breastfeeding for the first 6 months of life (South Africa. Department of Health 2007a:14).

Hilderbrand et al (2003:779) did a cross-sectional survey in Khayelitsha, Cape Town, on infant feeding in 2002. Of the women who were on the PMTCT programme, 95% formula-fed their infants; 70% did not have a problem with formula feeding. The conclusion was that this method was feasible and safe in urban environments where safe water is available.

2.6.5 Possible alternatives to breastfeeding in HIV infected mothers

Geoffrey and Weinberg (2000:203) suggest the following methods:

- Wet nurses and milk bank could be made use of, but transmission of infection could be possible.
- Heat treatment of the breast milk was suggested, but the comment is that the suggestion was impractical for home use.
- Exclusive breastfeeding with early weaning was said to be not to make an actual impact.
- Reduced breastfeeding mixed with replacement feeding was said to be more harmful than helpful.
- Antiretroviral therapy to mother and infant was efficient but expensive for developing countries.

Fraser et al (2006:369) recommend abrupt termination of breastfeeding after 3-6 months without weaning. The breast milk may be expressed and pasteurised, as the virus is rendered inactive at 56°–62°.

This clearly shows that there is no adequate method which does not have its disadvantages.

2.6.6 Factors affecting the mother's choice of feeding method

A study on HIV infected mothers' choice of feeding method was conducted in Cameroon in 2004 (Muko, Tchangwe, Ngwa & Njoya 2004:132). Of the infected mothers, 84% chose exclusive breastfeeding and 4% opted for mixed feeding.

The factors found to be against artificial feeding were the cost of the formula, stigma associated with not breastfeeding, family pressure and inconvenience in preparation and administration (Muko et al 2004:136).

Factors against breastfeeding included job pressure, loss of beauty, advice of the health worker and ill health (Muko et al 2004:136).

A direct relationship was found between age, educational level, income size, marital status and choice of feeding method. This means that exclusive breastfeeding was found to decrease with increasing age, as older women preferred formula feeding. Women with higher income preferred artificial feeding, as compared with the lower-income group. A higher number of single women in the study chose to breastfeed their babies than did the married mothers. It was observed that most of the teenage single mothers preferred breastfeeding because choosing artificial feeding was a declaration of an HIV positive status and that could reduce the chances of getting married (Muko et al 2004:136).

Latham and Preble (2000:1656-1660) state that in some African communities, such as Kenya, breastfeeding has fertility implications and that may affect the choice of infant feeding or the duration of practising exclusive breastfeeding and the importance of breastfeeding within the culture. Women breastfeed for contraceptive purposes aa well.

Illiyasu, Kabir, Abubakar and Galadanci (2005:50-55) found that educational standard, religion and occupation did not affect knowledge of breastfeeding.

Gupta and Khanna (1999:3) found, in a study done in India, that formula was more expensive than breastfeeding. This means that family income has an effect on the choice of infant feeding.

Butler, Williams, Tukuitonga and Paterson (2004:1) did a study in New Zealand in 2000. The results of the cohort study were that factors limiting adherence to exclusive breastfeeding for mothers who had initially breastfed exclusively included smoking, employment prior to pregnancy, being in current employment, high parity, dummy use, infant not being discharged at the same time as the mother, infant not sharing the same room as the parent(s) at night, regular childcare, and having a home visit for the infant from a traditional healer.

Ahmed and Al-Shoshan (2007:318) did a study regarding infant feeding practices and weaning in four maternity hospitals in Riyadh, Saudi Arabia. In this study, mothers were asked about factors that had more influence on their choices and decisions on exclusive breastfeeding or formula feeding; 62% of mothers said they were influenced by health providers regarding what to do and what not to do. The main reasons that influenced mothers to change to bottle feeding included having insufficient breast milk and working outside the home. 72.9% of mothers who were more educated practised breast feeding compared with 76.3% of mothers with a lower level of education, and only 73.4% of those with a higher family income practised breastfeeding compared with 75.1% of mothers from families with a lower income. The results obtained indicated a positive correlation between maternity age, childbearing and staying home issues and the tendency to breastfeed (Ahmed & Al-Shoshan 2007:320).

Scrimshaw, Engle, Arnold and Haynes (1987:467-470) did a study on Mexican women in two Los Angeles hospitals. The findings showed that 82% of the women who had the intention to breastfeed during the antenatal period did so during the postnatal period. More hours a day with the baby in the hospital and earlier initiation of breastfeeding were associated with a higher success rate of breastfeeding. The intention to work postpartum was associated with a shorter duration of breastfeeding.

Earle (2002:205-214) did a study in West Midlands, United Kingdom. The study was on the factors that affected initiation and promotion of breastfeeding. Some of the findings were that the desire for paternal involvement also seemed to be another influential factor; fathers were either seen as able to alleviate the daily chores of early motherhood, or there was a desire for 'shared parenting' by the mothers.

2.6.7 Pasteurisation of breast milk

The rate of transmission of HIV from mother to child through breastfeeding is between 12% and 26% (Hilderbrand et al 2003:779). It is recommended that HIV positive women who live in under-resourced areas and cannot afford formula feeding resort to other methods to prevent transmission of the HIV to their babies (Jeffrey, Webber, Mokhondo & Erasmus 2001:345-349).

The flash-heating and Pretoria pasteurisation method was tested in 2002 and the Pretoria pasteurisation method was found to be favourable as it was simple for mothers to follow. According to Jeffrey et al (2001:1), the specimen of expressed breast milk from HIV-infected volunteers 2-3 days post delivery was pasteurised and co-cultured and further subjected to molecular testing to determine any viable virus remaining in the sample. Even when the breast milk was spiked with bacteria, the bacteria were eliminated through both methods of heating. No significant vitamins and nutrients were destroyed during testing of these methods (Jeffrey et al 2001:341-345; Israel-Ballard, Chantry, Dewey, Lonnerdal, Sheppard, Donovan, Carlson, Sage & Abrams 2005:175-181; Harding 2005:175-181; Fraser et al 2006:369).

The Medical Research Council's Unit for Mother and Infant Health Care Strategies was actively involved with the "Pretoria pasteurisation method" (Stein 2000:14). The breast milk is expressed into a peanut butter glass jar and allowed to stand in a boiled water aluminium pot where the milk is heated to 56-63ºC for 20 minutes. During this process, 80% of the antibodies and nutrients are preserved but the HIV is destroyed, making the milk safe for the infant (Stein 2000:14).

2.6.8 Exclusive breastfeeding

This is defined as breastfeeding where the baby ingests nothing at all other than breast milk (McKerrow 2001:18; South Africa. Department of Health 2007a:9). The recommendation in this case is for HIV infected women to practise exclusive breastfeeding for the first 4-6 months of life.

According to Coutsoudis et al (1999:354), in a study on the impact of exclusive breastfeeding on vertical transmission of HIV, the conclusion was that exclusive breastfeeding exerts a protective covering on the baby's gut, thereby minimising the rate of transmission via the gut. These findings led to a recommendation of exclusive breastfeeding for HIV positive mothers who cannot afford formula feeding (Coutsoudis et al 1999:354; Kramer & Kakuma 2002:1).

Chisenga, Kasonga, Makasa, Sinkala, Chintu, Kaseba, Kasolo, Tomkins, Murray and Filteau (2005:266) state that exclusive breastfeeding is associated with a decreased risk of mother-to-child transmission of HIV if practised correctly without mixed feeding. The study regarding exclusive breastfeeding by HIV positive women was done in Zambia between May 2001 and September 2004. The results revealed that the factors that are associated with a shorter duration of practising exclusive breastfeeding include being a primipara and maternal systemic illness (Chisenga et al 2005:266-275; Kuhn, Aldrovandi, Sinkala, Kankasa, Semrau, Mwiya, Kasonde, Scott, Vwalika, Walter, Bultrys, Tsai & Thea 2008:130-141).

Further records on the study suggest that the association of exclusive breastfeeding with lower rates of mother-to-child transmission of HIV may not be causal but secondary to the fact that reduced duration of exclusive breastfeeding may be associated with poor maternal or infant health (Chisenga et al 2005:266-275). These findings were related to this study because the factors that led to a lack of commitment to exclusive breastfeeding by HIV positive women were being investigated in Zambia and these factors also need to be considered in South Africa.

According to Coutsoudis (in Hanna 2002), in an article presented at the Third Conference on Global Strategies on the Prevention of Mother-to-Child Transmission of HIV held in Uganda in 2001, a study done in Durban in 2002 revealed that exclusive

breastfeeding was more beneficial to the babies than formula feeding and mixed feeding. The infection rate was 24% in mixed feeding, 18% in formula feeding and 14% in exclusive breastfeeding; this is why exclusive breastfeeding should be preferred in developing countries with limited resources, as exclusive breastfeeding in HIV positive women reflected a lower infection rate. Coutsoudis et al (1999:354) make several practical recommendations for such women:

- Stop breastfeeding at 6 months, and then wean rapidly at 6 months because the benefits of breastfeeding are then outweighed by the risks of HIV.
- Use condoms during the 6 months of exclusive breastfeeding (condoms will protect the mother against re-infection with HIV or other STDs and consequent immunological and health problems).
- Stop breastfeeding if problems such as cracked or bleeding nipples develop.
- Seek prompt treatment if oral thrush develops in the infant.
- Heat treat (pasteurise) expressed breast milk, if possible.
- Provide antiretroviral drugs to the infant during breastfeeding, if possible.

These guidelines suggest changes to common practice in many parts of Africa, where it is customary to breastfeed for an average of 24 months and to give the infant additional foods (mixed feeding). Doctors at the 2001 Uganda conference found these suggestions reasonable and recommended that they be used by many clinicians for women who could not or would not formula-feed (Hanna 2002).

2.6.8.1 Benefits of exclusive breastfeeding in HIV positive mothers

Latham and Preble (2000:1656-1660) discuss the benefits of exclusive breastfeeding based on a study conducted in Durban, South Africa. The study showed that the risk of vertical transmission of HIV-1 associated with exclusive breastfeeding was considerably lower than that associated with mixed feeding. At 3 months of age there was little difference in the probabilities of HIV infection in infants whose mothers elected to breastfeed and in those whose mothers did not breastfeed at all. The infants who received mixed feeding (breast milk plus other fluids) had an appreciably higher risk of HIV-1 transmission than other groups. According to Latham and Preble (2000:1656-1660), the lower transmission rate in exclusively breastfed infants is due to the fact that these babies maintain a healthy gut epithelium, which acts as a viral barrier, and that

breast milk contains immune factors that have been shown in vitro to have antiviral and anti-HIV effects.

Kourtis and Ibegbu (2003:2) state that the presence of HIV antibodies has been recognised in the saliva of HIV infected individuals and that the saliva plays a protective role by making the environment hostile to the HIV virus. Kourtis and Ibegbu (2003:2), do not, however, recommend breastfeeding for HIV positive mothers in the developing world, due to limited knowledge about resistance to infection.

2.6.8.2 Transmission of HIV during breastfeeding

According to Geoffrey and Weinberg (2000:201), in a study done in Malawi in 1990 increased maternal viral load was associated with increased breast-milk viral load. If the mother has mastitis, which is evident by elevated breast-milk sodium levels, the transmission rate is high (Miller, Illif, Stoltzfus & Humphrey 2002:1247; McKerrow 2001:16).

The virus could enter into the epithelial submucosa along the infant's oral, pharyngeal, gastric or intestinal mucosa due to nutritional defects, infection or trauma. Oral thrush disrupts the mucosa, leading to susceptibility to infection (Muko et al 2004:133; Miller et al 2002:1247; McKerrow 2001:16; Coutsoudis 2005:11&12).

2.6.8.3 Role of the South African Government in exclusive breastfeeding

According to Evian (2003:1), South Africa has a variety of economic resources, consisting of very poorly resourced deep rural areas as against sophisticated and highly developed city areas. There was a need for the government to draw up a policy to meet the needs of the South African community. The health workers had to assess the situation of the HIV positive mother and provide what was appropriate during the post-test counselling sessions regarding the choice of infant feeding method.

Evian (2003:4) states in the policy guidelines that in drawing these up, the risks of formula feeding were considered, including the infant mortality rate (IMR). Demographic studies show that the IMR varies in different areas, with an increase in under-resourced areas where diarrhoea and respiratory tract diseases and malnutrition are rife, and a

decrease in well-resourced urban areas. Clean water and adequate sanitation were inaccessible in these areas, hence infant formula feeding could not be recommended. The government recommended and vigorously promoted exclusive breastfeeding in areas where hygienic formula feeding could not be guaranteed.

The Department of Health (South Africa. Department of Health 2007a:2) developed the most recent Infant and Young Child Feeding Policy which was finalised in 2007. The policy was developed in the context of the following national policies, strategies, programmes and global initiatives:

- The International Code of Marketing of Breast Milk Substitutes
- Innocenti Declaration
- Convention on the Rights of the Child
- Baby-Friendly Hospital Initiative
- Global Strategy for Infant and Young Child Feeding
- Infant Feeding Technical Consultation on HIV and Infant Feeding
  (South Africa. Department of Health 2007a:2)

The aim of the Infant and Young Child Feeding Policy is to improve the nutritional status, growth, development and health of infants and young children. Breastfeeding and exclusive breastfeeding for the first 6 months of life forms part of the key recommendations of the Infant and Young Child Feeding Policy (South Africa. Department of Health 2007a:3).

The Code of Marketing of Breast Milk Substitutes was considered during provision of formula for infant feeding by HIV positive mothers. The mothers were not to be coerced into a method but should be given adequate information that suited their individual situations (South Africa. Department of Health 2007a:13).

The policy explains that the risks of breastfeeding and formula feeding be balanced to prevent inadequate formula feeding when breastfeeding could be the better option (South Africa. Department of Health 2007a:7).

2.6.8.4 Exclusive breastfeeding and demographics

According to Iliyasu et al (2005:50-55), a survey was conducted in Gwale State in Nigeria to determine the knowledge and practice of exclusive breastfeeding in the mothers. The conclusion was that occupation, religion, ethnicity and parity were not significantly associated with knowledge or practice of exclusive breastfeeding of the mothers.

Gupta and Khanna (1999:123-127) did a survey in India to determine whether breastfeeding saves health costs. The findings were that breastfeeding saved 124 million dollars in formula feeding, and in contraception costs as it lowered fertility for the women. These findings illustrate the effect of economic costs on infant feeding choices.

2.7 MODE OF DELIVERY FOR HIV POSITIVE WOMEN

2.7.1 Vaginal delivery and elective Caesarean section

Thorne and Newell (2003:455) maintain that vaginal delivery is associated with a high rate of vertical transmission of HIV, as compared with Caesarean Section. The transmission rate was 1,8% in women who had the Caesarean Section as compared with 10.5% in those who delivered vaginally, which yielded 80% efficacy. These studies were done in America and Europe in 1999. Debates are still continuing on the use of Highly Active Antiretroviral Therapy and Caesarean Section for women with undetected viral load versus those who had the antiretroviral therapy and vaginal delivery in Europe in 2001. The discussions were based on postnatal complications of the infected women (Thorne & Newell 2003:455; Jamieson, Read, Kourtis, Durant & Lampe 2007:197).

A Caesarean section performed before labour and before rupture of membranes in HIV-infected women substantially reduces the risk of mother-to-child transmission. The positive effects of elective Caesarean Section have been confirmed even in women with low viral load, leading to lower transmission, especially in women who also received Highly Active Antiretroviral drugs in pregnancy (Higher rates of postpartum complications … 2004:2; Jaspan & Garry 2003:324; Thorne & Newell 2003:449; Jamieson et al 2007:197).

Jaspan and Garry (2003:324) further state that the safety, cost effectiveness and efficacy of the elective Caesarean Section as a preventative measure of HIV transmission to babies in countries with scarce resources and poor sterilisation techniques has not been established.

In South Africa the Department of Health (South Africa. Department of Health 2000:5) does not recommend the use of elective Caesarean Section for prevention of HIV transmission from mother-to-child due to the financial constraints and limited resources and the possibilities of post-operative complications.

2.7.2 Prevention of HIV transmission in labour

More than 60% of mother-to-child transmission of HIV occurs during labour and delivery (Van Dyk 2005:31) and the transmission may be prevented though the following:

2.7.2.1 Avoidance of foetal trauma

Avoidance of use of a foetal scalp electrode for monitoring foetal heart rate for women in labour and foetal blood sampling can reduce unnecessary exposure of the baby to the HIV, as the foetal scalp will be punctured leading to infection. This includes oropharyngeal suctioning, which may injure the mucosa, leading to entry of the HIV in the baby unless suctioning is gently done (Fraser et al 2006:368).

Fraser et al (2006:368) include other procedures to be avoided such as amnio-infusion, amniocentesis, forceps delivery and vacuum extraction, as they may lead to foetal injury and a predisposition to infection of the baby with the HIV from maternal secretions. The Department of Health (2007c:138) states in the Guidelines for Maternity Care in South Africa that invasive procedures have to be avoided in HIV positive women for the same reasons given by Fraser et al (2006:368): to prevent foetal injury.

2.7.2.2 Avoidance of maternal trauma

The Department of Health also emphasises the avoidance of performing an episiotomy routinely, for the prevention of mother-to-child transmission of HIV during delivery

(South Africa. Department of Health 2007c:138). Perineal trauma and episiotomies have to be avoided to minimise contact of the baby with maternal fluids (Fraser et al 2006:368).

2.7.2.3 Management of HIV positive clients during labour

Rupture of membranes must not be done routinely, in order to avoid contamination with liquor (Fraser et al 2006: 368; South Africa. Department of Health 2007c:138). Thorne and Newell (2003:450) further state that if the HIV positive woman gives birth within four hours of rupture of the membranes there is less then 50% chance of transmission of the HIV to the baby. Invasive procedures like forceps and vacuum extraction should be avoided to reduce the transmission rate (South Africa. Department of Health 2007c:138).

According to Fraser et al (2006:368), prophylactic antibiotics should be given before a Caesarean section or when membranes have ruptured for more than four hours and to women with a CD4 count of less than 200cells/mm^3.

The third stage of labour should be actively managed to prevent postpartum haemorrhage (Fraser et al 2006:368).

2.8 LACK OF COMMITMENT

The *Concise Oxford Dictionary* (1995:272) defines *commitment* as a pledge or undertaking; promising to adhere to a course of action.

Latham and Preble (2000:1656-1660) maintain that there is evidence that suggests that mixed breast and formula feeding is the most dangerous feeding option for the young infant. It increases the risks of HIV and other infections. The risks of lack of commitment have to be considered in cases where formula feeding is recommended to prevent mother-to-child transmission of HIV. In the study in which urban Kenyan women were assigned to either breast or formula milk feeding groups, poor commitment was reported in the formula group. The report was that the Nairobi women experienced community, family or spousal pressure to breastfeed, and were sometimes concerned about maintaining confidentiality of their HIV-1 status. In the study it was

difficult to ensure exclusive formula feeding in mothers who had been carefully counselled and had agreed to participate in an urban clinical trial in which formula milk was provided free. This means that fear of disclosure of the HIV status might affect conformity to any choice of infant feeding.

Hwang, Chung, Kang and Suh (2006:74-80) state that in a study done in Korea in 2000, the findings were that the higher the mother's educational level, the shorter the breastfeeding duration, though maternal age had no effect on the breastfeeding pattern. The study further revealed that women who delivered through Caesarean section were less likely to adhere to breastfeeding and that women whose babies weighed 2.5 kg and more were more likely to breastfeed than those who had babies with lesser weight. Based on these findings, commitment can be affected by mother's educational level, mode of delivery or baby's weight at birth.

2.9 CONCLUSION

This chapter discussed the literature findings related to commitment to exclusive breastfeeding of HIV positive clients. The literature revealed a considerable number of factors that are seen as positive for exclusive breastfeeding, and other factors that may impact negatively on exclusive breastfeeding. Factors that impact negatively on commitment to exclusive breastfeeding included job pressure and loss of beauty.

CHAPTER 3

Research methodology

3.1 INTRODUCTION

This chapter discusses the research methodology, including the design, purpose and research objectives, setting population and sample, data collection and analysis, measures to ensure reliability and validity, and ethical considerations.

3.2 AIM AND PURPOSE OF THE STUDY

The aim of the study was to encourage and maintain exclusive breastfeeding by HIV positive postnatal clients' commitment to exclusively breastfeed their babies.

The purpose of the study was to explore and describe the factors that altered the commitment of HIV positive clients who had opted to exclusively breastfeed their babies.

The objectives of the study were the following:

- To describe the factors which altered the HIV/AIDS postnatal clients' commitment to exclusive breastfeeding (EBF).
- Make recommendations to enhance exclusive breastfeeding to HIV positive pregnant clients.

Polit and Beck (2004:233) state that methodology in research refers to a systematic way of gathering data from a given population in order to understand a phenomenon and to generalise factors obtained to a larger population.

Methodology embraces the research design, population, instruments and collection of data, ethical considerations, data analysis and its interpretation. Methodology therefore

helps the researcher and the reader to understand the process of the research, thus giving it scientific merit.

3.3 RESEARCH APPROACH

The researcher adapted a quantitative research approach in this study. Quantitative research involves measurement and quantification of data obtained in a study and is often done in a controlled setting (experimental). It can also be non-experimental where the setting is natural and there is no manipulation of the independent variable. manipulation refers to treatment that is introduced by the researcher to find out its effect on the dependent variable (Brink, Van der Walt & Van Rensburg 2006:93). The HIV positive clients, who were the independent variable, were not subjected to any form of manipulation. A quantitative approach was selected because the study was conducted in a natural setting. The study south to explore and describe the phenomenon of interest, namely a quantitative, descriptive, non-experimental and exploratory design was chosen to describe the factors that alter HIV and AIDS postnatal clients' commitment to exclusive breastfeeding.

3.4 RESEARCH DESIGN

A research design is a "plan for approaching a research question" (Polit & Beck 2004:730).

Quantitative research uses structured tools to generate numerical data and uses statistics to interpret, organise and represent the collected data (Burns & Grove 2005: 23). The researcher used strategies that involved planning ahead of time and identifying responses in numerical form for easy analysis of data.

A non-experimental, descriptive, exploratory survey design was used in the study. An explorative descriptive study can generate valuable information about the phenomenon of interest. The study design allowed the researcher to remain objective, as the study focused on measurable variables such as exclusive breastfeeding.

3.4.1 Descriptive

Polit and Beck (2004:192) state that the purpose of descriptive research is to observe, describe and document aspects of a situation as it occurs naturally. The *Concise Oxford Dictionary* (1995:365) defines *descriptive* as “describing or classifying without expressing feelings or judging”.

The study was descriptive in that the researcher collected detailed description of the factors that altered the HIV and AIDS postnatal clients’ commitment to exclusive breastfeeding.

Descriptive research provides an accurate portrayal of a particular individual, event or group in real-life situations for the purpose of discovering new meaning, describing what exists, determining the frequency with which something occurs and categorising information (Burns & Grove 2005:102). Lobiondo-Wood and Haber (2002:222-223) state that descriptive statistics describe various characteristics of data under study: in this case, HIV positive clients who show evidence of lack of commitment to exclusive breastfeeding.

3.4.2 Exploratory

Polit and Beck (2004:20) state that exploratory research investigates the full nature of the phenomenon. The *Concise Oxford Dictionary* (1995:475) defines *exploratory* as “a preliminary, serving to establish procedure” and *explore* as “to investigate thoroughly”. The researcher had to establish the factors that altered HIV positive clients’ commitment to exclusive breastfeeding.

3.4.3 Survey

A survey is designed to “obtain information about the prevalence, distribution and interrelations of variables within a population”. The survey obtains information from a sample of people in which the participants respond to a series of questions asked by researchers (Polit & Beck 2004:234). Data, in a survey is collected by way of a structured interview schedule. In this study, the researcher sought information in order

to explore and describe the factors altering HIV and AIDS postnatal clients' commitment to exclusive breastfeeding.

3.5 GEOGRAPHICAL AREA/RESEARCH SETTING

The research setting refers to :the surrounding environment in which the research takes place" (De Vos 2001:301). The study was conducted in George Mukhari Hospital and the HIV positive postnatal clients were the respondents.

The research setting is the environment in which the study takes place and may be a natural or controlled environment. Natural settings are real-life study environments without any changes made for the purpose of the study (Burns & Grove 2005:326).

A quantitative approach was selected because the study was conducted in a natural setting.

The George Mukhari hospital is situated near Ga Rankuwa Township and is one of the 22 hospitals that render PMTCT services in the Gauteng Province in South Africa. This is a level 3 referral academic hospital that caters for the population of the whole region and is situated near Rosslyn.

The hospital is situated in Pretoria. Pretoria covers a geographical area of 2 174 square kilometres. The population of Pretoria as indicated in the last 2005 census was 2 040 517 people and the growth rate is projected at 2,17%. The population density of Pretoria is 938 people per square kilometre in the urban area. Pretoria is an urban area, 97% of which falls into Gauteng province (South Africa City Population 2007).

The hospital was chosen because it offered PMTCT, VCT and anti-retroviral drugs in pregnancy. The antenatal and postnatal clinics at the hospital had facilities for Voluntary Counselling and Testing and PMTCT. All clients who deliver babies in hospital and are without complications are referred to peripheral clinics for postnatal follow-up.

The HIV positive clients are referred to the hospital Paediatric Outpatients on Fridays for the screening of babies for HIV using the Polymerase Chain Reaction Test (PCR) at the 6 weeks postnatal follow-up. Data were collected at the postnatal wards and mainly at

the Paediatric Outpatients Department when HIV positive clients brought their babies for Polymerase Chain Reaction Testing for HIV.

3.6 POPULATION AND SAMPLING METHODS

3.6.1 Population

A population is a set of individuals who meet sampling criteria, and sampling includes selecting a group of people or subjects with which to conduct a study (Burns & Grove 2003:233). The accessible population is the population that is available for the study (Polit & Beck 2004:218).

The target population in this study comprised all postnatal women visiting George Mukhari postnatal clinic who had attended the PMTCT programme, while the accessible population was all the postnatal clients who met these conditions and were at the postnatal clinic and Paediatric Outpatients, and were actually available for the study.

3.6.2 Sampling method

Sampling involves a process of selecting a subsection of the population that represents the entire population in order to obtain information regarding the phenomenon of interest. A sample is a subsection of the population that is selected to participate in a study (Polit & Beck 2004:730).

There are two methods of sampling; one yields probability samples in which the probability of selection of each respondent is assessed. The other yields non-probability samples in which the probability of selection is unknown (Polit & Beck 2004:295).

The study used a convenience sampling method of non-probability sampling design to select the clients used as respondents. Convenience sampling uses the most readily available or most convenient group of subjects for the sample (Brink et al 2006:132). This method was chosen because it provided easy access to the respondents. It was simple, practical, economical, quick and did not require an elaborate sampling frame (Brink et al 2006:133). Burns and Grove (2003:248) point out that the advantage is that the sampling is inexpensive and accessible, with less time needed to acquire

information. The disadvantages are that there is little opportunity for control of biases and that representativeness of the sample might be a concern. In convenience sampling participants are included in the study because they are in the right place at the right time (Polit & Beck 2004:292).

Not every HIV positive client had an equal chance of being included in the sample because there was no census or complete list of all the clients who opted to exclusively breastfeed and would attend the George Mukhari postnatal clinic or Paediatric Outpatients. Consequently there was no sampling frame from which a sample could be drawn randomly to ensure that every HIV positive postnatal client who opted to exclusively breastfeed had an equal chance of being included in the sample. Hence the sampling method used by the researcher was non-probability or convenience sampling. De Vos (2002:168) states that convenience sampling is the rational choice in cases where it is impossible to identify all the members of a population.

The respondents were chosen from HIV positive postnatal clients who were attending the postnatal clinic when the researcher was present at the clinic. The researcher checked the files of clients who tested HIV positive at the antenatal clinic and who had opted to exclusively breastfeed. The clients were now attending the postnatal clinic or had brought babies to the Paediatric Outpatients for HIV testing at 6 weeks. The postnatal records were used to determine the clients who had chosen exclusive breastfeeding.

In this study the pregnant women who had gone to the antenatal clinic would be identified; those who had undergone VCT, tested HIV+ and chosen exclusive breastfeeding would be selected in the postnatal clinic. Records of these clients are kept in the postnatal ward in a register, enabling convenient follow-up. Most clients were seen at the Paediatric Outpatient Department during the 6 weeks postnatal follow-up. Follow-up was done at the clinic to maintain confidentiality because the relatives might not be aware of the client's HIV status; therefore patients would be seen away from the home environment.

3.6.3 Sampling frame

A sampling frame is a list of all the elements in the population from which the sample is drawn (Polit & Beck 2004:731). The clients who opted exclusive breastfeed and attended the postnatal clinic were used as the sampling frame.

3.6.4 Sampling procedure

The researcher sought the assistance of the Nursing Service Manager and professional nurses to obtain a list of clients attending the postnatal clinic and Paediatric Outpatient Department and to identify clients according to the eligibility criteria.

The professional nurses were requested to provide the list of names of the clients who visited the postnatal clinic and the Paediatrics Outpatients Department. The researcher checked the clients meeting the eligibility criteria as they arrived at the clinic.

3.6.5 Sample size

The size of a sample is “the total number of respondents who actually participate in a study in relation to the accessible population” (Brink et al 2006:135). Furthermore, there are not strict rules to determine the sample size. In determining a sample size, the precision of the data collection instrument should be considered. Less precision requires a larger sample than that required when an instrument with more precision is used.

A sample of 46 women was interviewed. The sample size adequacy was determined by using power analysis, whereby the capacity of the study to detect differences or relationships that exist in the population was considered (Burns & Grove 2005:358). In this study the sample was drawn from the target population and consisted of 46 respondents.

3.6.6 Inclusion criteria of respondents

Burns and Grove (2003:234) define inclusion criteria as a list of characteristics that are important for inclusion in the study.

In this study the criteria included the following:

- Being HIV positive women who attended the postnatal clinic
- Having undergone the PMTCT programme during pregnancy and having tested HIV positive at an antenatal clinic
- Having committed themselves to breastfeeding exclusively during the post-testing counselling sessions

The parameters of generalisability in this sample are negligible; the study did not seek to generalise the wide population. The study simply represents itself.

3.6.7 Exclusion criteria

Exclusion criteria are characteristics that exclude the respondents from inclusion in the study (Polit & Beck 2004:71). In this study the respondents who were not willing to participate in the study were excluded from the study.

3.7 DATA COLLECTION

Data collection is a systematic way of gathering information that is relevant to the research purpose or questions (Burns & Grove 2003:298). The researcher used a structured data collection approach in this study. In structured data collection the researcher records the possible responses in advance and allows the respondents to select the responses applicable to them. Quantitative research often uses a structured data collection approach (Polit & Beck 2004:349).

3.7.1 Characteristics of a structured data collection

Polit and Beck (2004:318) point out that in structured data collection:

- The wording used is predetermined and standardised and the same method or instrument is used for all respondents.
- An indication is given beforehand as to what information will be collected and how it will be collected.
- The researcher develops the data collection instrument beforehand.

- Data collected can be quantified with ease.
- Data collection is unobtrusive to a certain extent because respondents are allowed to respond without interference.
- The researcher is required to have the same knowledge of the expected behaviour.

3.7.2 Rationale for using structured data collection

Structured data collection allows for a wide content coverage; for example, beliefs and attitudes that may not be easy to determine or express can be included, as well as the respondents' personal background. Although a lot of effort is required in the preparation pf the data collection instrument, it can be used with ease in retrospective events (Polit & Beck 2004:320).

In the study the respondents were required to answer questions related to their personal background, information given during Voluntary Counselling on HIV and infant feeding methods, their breastfeeding practices and maternal and baby's health after delivery.

3.7.3 Data collection technique

The self-report technique was used to collect data in the study. In the self-report technique, specific questions are developed, written down beforehand and asked in the same order to all respondents. Questions should be unambiguous, understandable, simple and short. Questions should range from general to specific, sensitive information should be asked last and the structured interview schedule should not be long. The researcher designs and records the range of possible responses and the content is carefully worded. Both open-ended and closed questions are included. The self-report technique is direct and adaptable when seeking information about what people think, feel and believe (Polit & Beck 2004:320). The self-report technique was therefore suitable for this study and enabled the researcher to collect data related to the objectives of the study.

3.7.4 Data-collecting instrument

A data-collecting instrument is a tool that is used to collect data and elicits the same information from each respondent (Polit & Beck 2004:318). A structured interview schedule was used as the data-collecting instrument in this study.

After an in-depth literature study of the concepts discussed, the researcher designed the structured interview schedule with the guidance of the supervisor, joint supervisor and the statistician. The final structured interview schedule was discussed with the supervisor, statistician and health professionals involved in the PMTCT programme and was accepted in terms of face and content validity.

The researcher designed an interview schedule with both open-ended and closed questions. The questions were divided into six parts.

Section A comprised the demographic data that sought to obtain the respondents' details such as age, marital status and educational status, as this information might have affected the choice of infant feeding and commitment.

Section B aimed at finding information about the Voluntary Counselling and Testing services, as this might have had an influence on commitment to exclusive breastfeeding.

Section C sought to determine information on patients' communication about their HIV status to their partner and relatives, as support for the client's choice of feeding method affects commitment.

Section D aimed at finding information about breastfeeding practices and cultural factors that might have caused lack of adherence to exclusive breastfeeding.

Section E sought to determine information about the baby's health, as its condition might affect infant feeding.

Section F comprised questions on the transmission of HIV and infant feeding methods in order to determine the knowledge level of the clients who have undergone VCT, as a lack of understanding of exclusive breastfeeding might have led to lack of commitment.

3.7.5 Rationale for selecting the data collection instrument

The structured interview schedule was selected because it enabled the investigator to be consistent in asking questions, and data yielded were easy to analyse (Polit & Beck 2004:318). The researcher used a structured interview schedule for data collection, with the purpose of collecting data regarding the factors that altered HIV and AIDS postnatal clients' commitment to exclusive breastfeeding.

3.7.6 Administration of the structured interview schedule

The researcher went to the selected postnatal clinic and Paediatric Outpatients Department in person. The institutions provided the researcher with contact persons who assisted in the selection of clients for the interviews.

Data were collected in August and September 2007 using a structured interview schedule on a face-to-face basis with the respondents. The prospective respondents attending the postnatal clinic and Paediatric Outpatients were approached and requested to participate in the study. Detailed information about the study was given to the clients, using their own mother-tongue language before consent to participate was obtained. Both verbal and written consent were obtained before the face-to-face interviews.

Face-to-face interviews were carried out (the researcher asked the respondents the questions) in a private room at the Paediatric Outpatients Department where the babies had been brought for their 6-weeks follow-up for Polymerase Chain Reaction Test to determine if the babies were infected with the HIV. Data were collected on Fridays between 08h00 and 16h00 as the clinic was operational at this time.

A total of 46 respondents were interviewed in a private room to provide for confidentiality. The interview session lasted for 45-60 minutes. The questions were

asked and clarity provided for the questions that needed the researcher to be simplified for the respondents to understand.

3.8 MEASURES TO ENSURE RELIABILITY AND VALIDITY

3.8.1 Reliability

Reliability relates to the precision and accuracy of the instrument. If used with a similar group of respondents in a similar context, the instrument should yield similar results (Polit & Beck 2004:416). In this study, accurate and careful phrasing of each question attempted to avoid ambiguity, and leading respondents to a particular answer ensured reliability of the tool. The respondents were informed of the purpose of the interview and of the need to respond truthfully. The researcher obtained the supervisor's assistance to ensure that the instrument was reliable. In addition the pre-testing of the instrument was also conducted before the study.

3.8.2 Validity

Validity refers to the degree to which a test or instrument measures what it purports to measure (Burns & Grove 2003:274). It refers to the accuracy and truthfulness of the findings (Brink et al 2006:118). There are four types of validity: external, internal, content and face validity.

- **External validity**

External validity refers to the generalisability of the research findings to other settings. A study is externally valid if the sample is representative of the broader population (Polit & Beck 2004:216-217).

- **Internal validity**

Polit and Beck (2004:213) define internal validity "as the extent to which it is possible to state that the independent variable is influencing the dependent variable and that the relationship between the two is not the spurious effect of an extraneous variable".

- **Content validity**

Content validity refers to the degree to which the instrument has an adequate sample of items for the construct being measured. A panel of experts should be used to evaluate and document the content validity of new instruments, also looking at item relevance (Polit & Beck 2004:423).

- **Face validity**

Face validity considers the extent to which the instrument looks as though it measures the appropriate construct. It forms a subjective impression of whether the instrument appears to measure what it is supposed to measure (Polit & Beck 2004:423).

3.9 PRE-TESTING THE INSTRUMENT

A pre-test is a trial run of the major study. Its purpose is to make sure that the instrument can be clearly understood by the respondents and that it captures the required data (Polit & Beck 2004:328). The pre-test is used to check the time taken to complete the interview schedule, whether it is too long or too short, too easy or too difficult and to check the clarity of the questions asked, and to eliminate ambiguous or inadequately worded questions so that adjustments can be made (Burns & Grove 2003: 41; Polit & Beck 2004:328).

The instrument can be refined if necessary after pre-testing to ensure that it captures the appropriate data. A pre-test was conducted in this study to test the instrument for reliability. The researcher conducted a pre-test with ten respondents who had similar characteristics to the research sample but who were not part of the main study.

Following the pre-test the following were altered: the “Single” marital status (question 4) was omitted from the original structured interview schedule, it was classified under “Other”. Two questions were numbered 46 and 47 (Sections C and D). Section C was numbered 46a and 47a and Section D was numbered 46b and 47b. Time for interviewing each respondent was approximated to 45 minutes to 1 hour. The structured interview schedule was also given to expert researchers for comments.

3.10 DATA ANALYSIS

Data analysis is the systematic organisation and synthesis of the research data and the testing of research hypotheses, using these data (Polit & Beck 2004:451). It also entails categorising, ordering, manipulating and summarising the data and describing them in meaningful terms (Brink et al 2006:170). In this study the completed structured interview schedules were given to the statistician, who used the SPSS version 13.0 computer program to analyse the data, and the results were presented in descriptive statistics such as frequencies and percentages. Most of the questions included were closed questions. These were coded for easy analysis by the computer. The open-ended questions were categorised by hand by the researcher according to similar responses. The findings are discussed and data presented in the form of frequency tables and bar graphs in chapter 4.

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3.11 ETHICAL CONSIDERATIONS

Pera and Van Tonder (2005:4) define ethics as “a code of behaviour considered correct”. It is crucial that all researchers be aware of researcher ethics. Ethics relates to two groups of people; those conducting research, who should be aware of their obligations and responsibilities, and the “researched upon”, who have basic rights that should be protected. The study therefore had to be conducted with fairness and justice by eliminating all potential risks. The respondents must be aware of their rights. Ethical issues observed in the study may include informed consent, right to anonymity and confidentiality, right to privacy, justice, beneficence and respect for persons (Brink & Wood 1999:137).

3.11.1 Informed consent

The respondents agreed to participate in the study willingly. Consent was obtained from each research respondent. They were informed in writing that they could withdraw if they chose to, without intimidation from health care personnel and the institution. The purpose of the study, data collection method and the participation needed was explained to the participants (Burns & Grove 2005:193) (see Annexure A for the consent form).

3.11.2 Confidentiality

To ensure confidentiality, the lists of respondents' names for sampling purposes were kept secure. Respondents were made aware that the information would be used purely for research and results would be made available if they needed them (Burns & Grove 2005:188).

3.11.3 Anonymity

Anonymity was assured as neither the names of respondents nor those of the institutions involved were requested on the questionnaires. Anonymity is assured when even the researcher cannot link a participant with the data for that person (Burns & Grove 2005:188).

3.11.4 Beneficence

Principles of beneficence, meaning that participants must not be harmed, have to be adhered to. Ending the interview or providing follow-up referral or counselling whenever there is a need must always protect the welfare of the participants (Speziale & Carpenter 2002:314). In this study no physical, psychological or economic risks were involved, as this study was non-experimental. The researcher ensured that no harm came to the respondents and sought permission to conduct the study.

3.11.5 Permission to conduct the study

Ethical considerations were implemented to prevent any ethical dilemma. Permission from the George Mukhari Hospital Deputy Director was obtained, as well as from the clinic matron and Head of the Obstetric and Paediatric units (see Annexure B). Care was taken to ensure the rights of the informants**.**

3.11.6 Ethical conduct

Ethical measures are as important in quantitative research as in qualitative research and include ethical conduct towards participants' information as well as honest reporting

of the results. Data were presented to the statistician for analysis exactly as participants submitted them, without fabrication.

3.11.7 Respect for human dignity

The principle of human dignity encompasses the right to self-determination, respect and full disclosure about the study (Polit & Beck 2004:147-149).The right to self-determination and informed consent were observed, as the respondents participated voluntarily and could withdraw from the study at any time. The respondents were granted freedom to ask questions to clarify issues not clear to them. The researcher explained her role in the study and provided them with a contact telephone number. The respondents were not deceived in any way and their contribution was acknowledged.

3.11.8 Justice

The principle of justice encompasses the right to fair treatment and privacy for subjects of research. Data gathered from the study were kept and treated in strict confidence, and anonymity was observed by ensuring that the respondents did not write their names on the structured interview schedule. All agreements made during the study were honoured, including the freedom to ask questions at any time. Information gathered from the study was used only for the intended purpose and findings were reported as accurately as possible (Polit & Beck 2004:149-150). No personal beliefs or convictions about the study were included.

3.11.9 Benefits

The respondents were informed that they would receive no monetary benefits from participating in the study. The findings would benefit the institutions in terms of providing inputs for increasing commitment to exclusive breastfeeding by clients who had chosen that option.

3.12 SUMMARY

This chapter discussed the methodology followed in conducting the study. It described the research design, population and sampling procedures. and also the data collection

instrument and collection of data. Chapter 4 discusses the data analysis of the information obtained from structured interview schedule completed by postnatal clients who showed evidence of lack of commitment to exclusive breastfeeding.

CHAPTER 4

Data analysis and interpretation

4.1 INTRODUCTION

This chapter presents the data analysis and interpretation. The purpose of the study was to explore and describe the factors that altered the commitment of HIV positive clients who had opted to exclusively breastfeed their babies. The study seeked to describe the factors that altered HIV/AIDS positive clients' commitment to their decision to exclusively breastfeed their babies and make recommendations to enhance exclusive breastfeeding to HIV positive clients.

The researcher collected data from the respondents using a structured interview schedule consisting of six sections:

- Section A: Socio-demographic data
- Section B: Voluntary counselling and testing (VCT)
- Section C: Communicating HIV status
- Section D: Breastfeeding practice
- Section E: Infant health
- Section F: Knowledge of HIV and infant feeding

Forty-six respondents participated in the study in August and September 2007. A statistician analysed the data, using the Statistical Package for Social Sciences (SPSS) version 13.0 program. Descriptive and inferential statistics such as frequencies, tables and percentages illustrated in pie charts, tables and bar graphs were used in the data analysis and summaries.

In some instances, the total percentage of frequencies adds up to 99.9% or 100.1% due to rounding-off the one decimal point. These were rounded-off to 100.0%. A total of 46 respondents were interviewed using a structured interview schedule.

4.2 SECTION A: SOCIO-DEMOGRAPHIC DATA

The socio-demographic data included age, ethnic group, religious affiliation, marital status, number of people living in the household, educational standard and tertiary qualifications, employment and family income, all factors which might alter the postnatal HIV positive women's decision to commit herself to exclusive breastfeeding.

4.2.1 Item 1: Age

The ages are evenly distributed between 18 and 24 years. Figure 4.1 shows that the number of women 18 years and younger were 17.4% (n=8) and those between the ages of 19 and 21 were 28.2% (n=13). There were 19.5% (n=9) between 22 and 24 years, and 34.8% (n=16) older than 24 years.

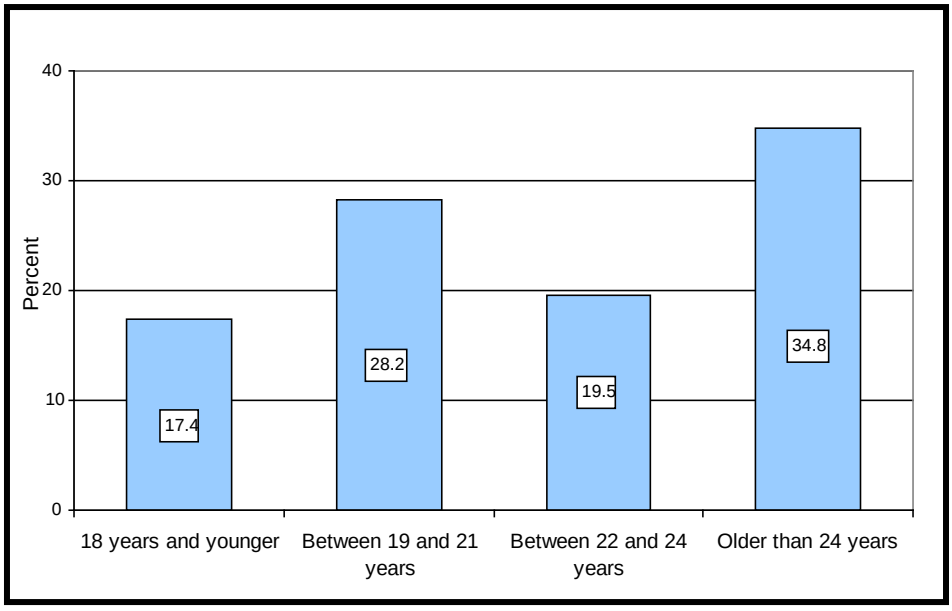

Figure 4.1 Age of the respondents (N=46)

4.2.2 Item 2: Respondents' ethnic group

All the respondents answered this question (N=46). There were 15.2% (n=7) Zulu speaking respondents, 13% (n=6) Xhosa, 21.7% (n=10) Tswana, 17.4% (n=8) Northern Sotho, 6.5% (n=3) Southern Sotho, 21.7% (n=10) Tsonga, while 4.4% (n=2) were Venda and the others were Ndebele speaking (see table 4.1).

Table 4.1 Respondents' ethnic group (N=46)

Ethnic group	Frequency	Percent
Zulu	7	15.2
Xhosa	6	13.0
Tswana	10	21.7
Northern Sotho	8	17.4
Southern Sotho	3	6.5
Tsonga	10	21.7
Venda	1	2.2
Other	1	2.2
Total	**46**	**100.0**

4.2.3 Item 3: Respondents' religious affiliation

All respondents answered this question (N=46). The respondents answered as follows: 6.5% (n=3) had no religious affiliation, 39.1% (n=27) were Lutheran, Catholic and Apostolic, 23.9% (n=11) were Zion, 8.7% (n=4) were Born Again Christians, 15.2% (n=7) were Methodist, Dutch Reformed, Swiss Mission and Anglican and 6.5% (n=3) were Presbyterian and Jehovah's Witnesses.

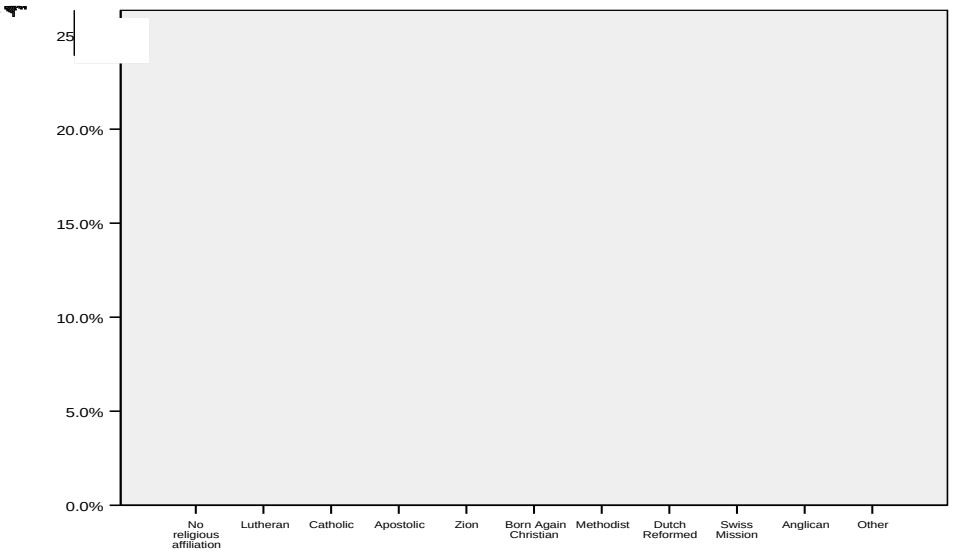

Figure 4.2 Respondents' religious affiliation (N=46)

4.2.4 Item 4: Respondents' marital status

A total of 46 respondents (N=46) answered this question. A total of 15.2% (n=7) were married, 43.5% (n=20) were living together with a partner, 6.5% (n=3) were separated and 34.8% (n=16) were single (see figure 4.3).

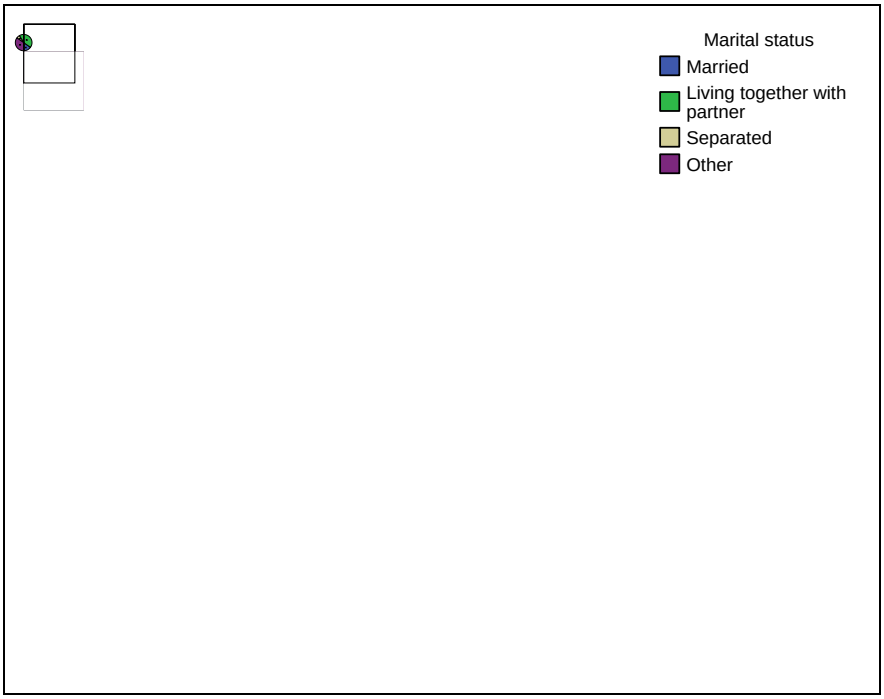

Figure 4.3 Respondents' marital status (N=46)

4.2.5 Item 5: Respondents' living in an urban area

All the respondents answered this item (N=46). The respondents living in an urban area were 84.8% (n=39), while 15.2% (n=7) did not live in an urban area (see table 4.2).

Table 4.2 Respondents living in an urban area (N=46)

Valid	Frequency	Percent
Yes	39	84.8
No	7	15.2
Total	**46**	**100.0**

4.2.6 Item 6: Number of people living in the respondents' household

Of the 46 respondents, 8.7% (n=4) had fewer than 3 people in their households, 19.6% (n=9) had 3 people, 23.9% (n=11) had 4 people, 21.7% (n=10) had 5 people, 21.8% (n=10) had 6 and 7 people and 4.3% (n=2) had 8 and 9 people in their households.

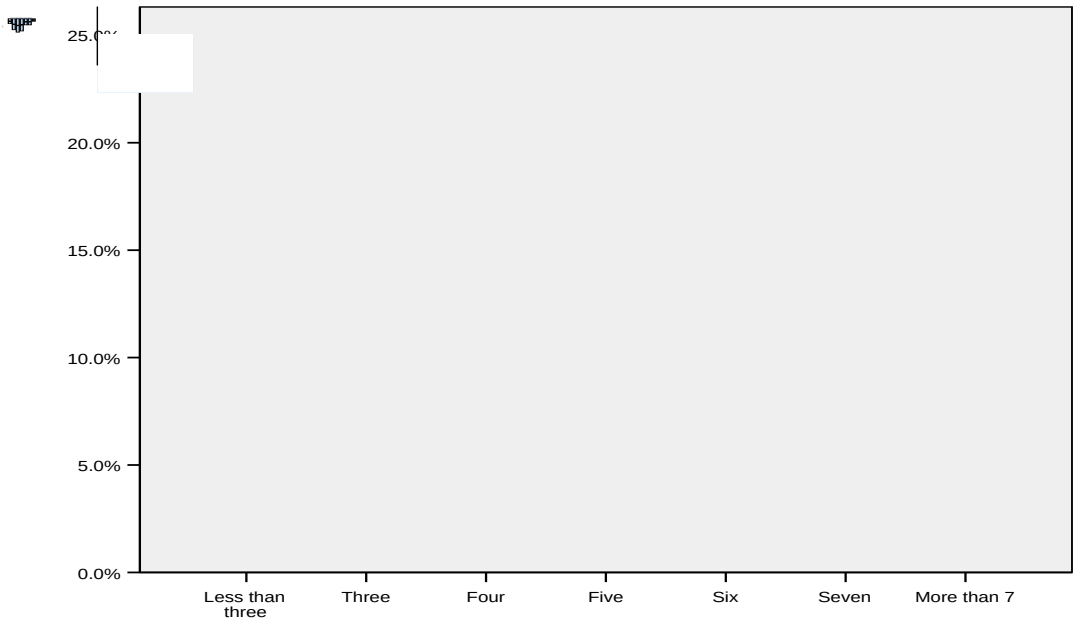

Figure 4.4 Number of people living in the respondents' household (N=46)

4.2.7 Item 7: Respondents' highest educational grade passed at school

All the respondents answered this item (N=46). There were 4.3% (n=2) respondents that had no schooling, 10.9% (n=5) that had passed grade 5 and below, 6.5% (n=3) had passed grade 6, 28.2% (n=13) had passed grades 7 and 8, 6.5% (n=3) had passed grade 9, 15.2% (n=7) had passed grade 10, 17.4% (n=8) had passed grade 11 and 10.9% (n=5) passed grade 12 (see table 4.3).

Table 4.3 Respondents' highest educational grade (N=46)

Highest educational grade	Frequency	Percent
No schooling	2	4.3
Grade 5 and below	5	10.9
Grade 6	3	6.5
Grade 7	6	13.0
Grade 8	7	15.2
Grade 9	3	6.5
Grade 10	7	15.2
Grade 11	8	17.4
Grade 12	5	10.9
Total	**46**	**100.0**

4.2.8 Item 8: Respondents' tertiary qualification

All the respondents answered this question (N=46). Only 6% (n=3) had a tertiary qualification and 93.5% (n=43) had no tertiary qualification.

Table 4.4 Respondents who had a tertiary qualification (N=46)

Have tertiary qualification	Frequency	Percent
Yes	3	6.5
No	43	93.5
Total	**46**	**100.0**

4.2.9 Item 9: Respondents' tertiary education

All the respondents 100% (N=46) answered the question with regard to tertiary education. Of the 46 respondents only 3 respondents had tertiary education; 4.3% (n=2) had a Diploma and 2.2% (n=1) had a certificate qualification.

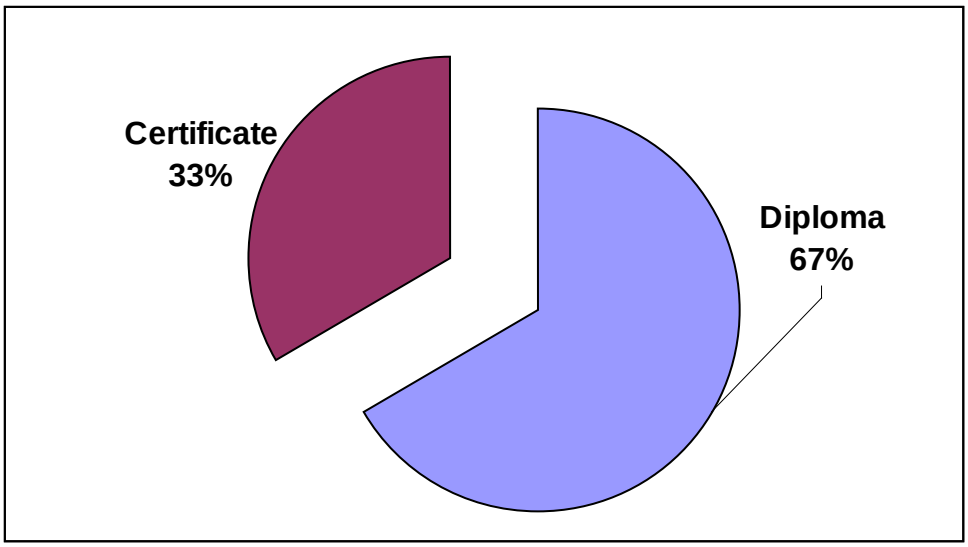

Figure 4.5 Respondents' tertiary qualifications (N=46)

4.2.10 Item 10: Respondents' presently working

All the respondents answered this item (N=46). There were 28.3% (n=13) working and the other 71.7% (n=33) were unemployed.

Table 4.5 Respondents' presently working (N=46)

Presently working	Frequency	Percent
Yes	13	28.3
No	33	71.7
Total	**46**	**100.0**

4.2.11 Item 11: Respondents' occupation

All the respondents answered this question (N=46). Of the 46 respondents only 13 respondents were employed: 3 respondents (6.5%) were clerks, 5 respondents (10.9%) were domestic workers/housekeepers, 1 respondent (2.2%) was a salesperson and 4 respondents (8.7%) were employed as farm workers, a banquet manager and a self-employed hairdresser (see table 4.6).

Table 4.6 Respondents' occupation (N=46)

Respondents' occupation	Frequency	Percent
Clerk	3	6.5
Domestic worker/housekeeper	5	10.9
Sales person	1	2.2
Other	4	8.7
Not applicable	33	71.7
Total	**46**	**100.0**

4.2.12 Item 12: Respondents' reasons for not working

All respondents (N=46) answered this question but it was not applicable for 28.3% (n=13) of the respondents. Of the respondents 52.2% (n=24) could not find a job, 8.7% (n=4) did not work because they were pregnant, 10.9% (n=5) had other reasons like still attending school, bringing up the baby and one had no identity document (see table 4.7).

Table 4.7 Respondents' reasons for not working (N=46)

Reasons for not working	Frequency	Percent
Cannot find a job	24	52.2
Because I am pregnant	4	8.7
Other	5	10.9
Not applicable	13	28.3
Total	**46**	**100.0**

4.2.13 Item 13: Respondents' family income per month

All respondents answered the question (N=46). The income of 17.4% (n=8) was below R1 000, 45.7% (n=21) earned R1 000–R3 000, 30.4% (n=14) earned an income of R3 001–R6 000, 4.3% (n=2) earned R6 001–R10 000 and 2.2% (n=1) had an income above R10 000 (see table 4.8).

Table 4.8 Respondents' family income per month (N=46)

Family income per month	Frequency	Percent
Below R1 000	8	17.4
R1 000-R3 000	21	45.7
R3 001-R6 000	14	30.4
R6 001-R10 000	2	4.3
Above R10 000	1	2.2
Total	**46**	**100.0**

4.2.14 Item 14: Respondents' main source of income in the family

All the respondents answered this item (N=46). Spouses seem to be the main source of income at 58.7% (n=27). Mothers as source of income were 10.9% (n=5), fathers were 4.3% (n=2) and only 1 grandmother was a source of income (2.2%). Respondents who were themselves the main sources of income were 10.9% (n=5). "Other" main sources of income were 13% (n=6), where a brother or sister was working, both partners were main sources of income and where nobody was employed in the family (see table 4.9).

Table 4.9 Respondents' main source of income in the family (N=46)

Main source of income in the family	Frequency	Percent
Self	5	10.9
Spouse	27	58.7
Mother	5	10.9
Father	2	4.3
Grandmother	1	2.2
Other	6	13.0
Total	**46**	**100.0**

4.3 SECTION B: VOLUNTARY COUNSELLING AND TESTING (VCT)

The respondents were asked about the Voluntary Counselling and Testing to determine whether the services rendered had an effect on the decision of the HIV positive postnatal women not to practise exclusive breastfeeding as chosen during counselling.

4.3.1 Item 15: Respondents' gestational period on initial visit

All the respondents answered this question (N=46). Respondents that were below 24 weeks pregnant were 28.3% (n=13), 54.3% (n=25) were more than 24 weeks pregnant and 17.4% (n=8) were not sure of the duration of pregnancy (see table 4.10).

Table 4.10 Respondents' gestational period on initial visit (N=46)

Gestational period on initial visit	Frequency	Percent
Below 24 weeks pregnant	13	28.3
Above 24 weeks pregnant	25	54.3
Not sure of duration	8	17.4
Total	**46**	**100.0**

4.3.2 Item 16: Respondents attended VCT session on initial visit

A total of 46 (N=46) answered the item; 97.8% (n=45) attended the VCT session on the initial visit and 2.2% (n=1) did not attend the session on the initial visit (see table 4.11).

Table 4.11 Respondents attended VCT session on initial visit (N=46)

Attended VCT on initial visit	Frequency	Percent
Yes	45	97.8
No	1	2.2
Total	**46**	**100.0**

4.3.3 Item 17: Respondents were tested for HIV on initial visit

A total of 46 respondents answered the question (N=46). There were 82.6% (n=38) that were tested for HIV on their initial visit and 17.4% (n=8) that were not tested on their initial visit (see table 4.12).

Table 4 12 Respondents were tested for HIV on initial visit (N=46)

Respondents were tested for HIV on initial visit	Frequency	Percent
Yes	38	82.6
No	8	17.4
Total	**46**	**100.0**

4.3.4 Item 18: Reasons why respondents did not test for HIV on initial visit

Of the 8 respondents who were not tested on the initial visit, 62.5% (n=5) said they were not mentally ready, 25% (n=2) said they tested on their third visit at 36 weeks gestation and 12.5% (n=1) had tested positive in the previous pregnancy (see table 4.13).

Table 4.13 Reasons why respondents did not test for HIV on initial visit (N=8)

Reasons why the respondents did not test for HIV on initial visit	Frequency	Percentage
Not mentally ready	5	62.5
Tested on third visit at 36 weeks gestation	2	25.0
Had tested positive in previous pregnancy	1	12.5
Total	**8**	**100.0**

4.3.5 Item 19: The stages of HIV infection were explained to the respondents during VCT

All 46 (N=46) respondents answered this item; 60.9% (n=28) had the stages of HIV infection explained during VCT but 39.1% (n=18) did not get the explanation (see table 4.14).

Table 4.14 Stages of HIV infection were explained to the respondents during VCT (N=46)

Stages of HIV infection were explained during VCT	Frequency	Percent
Yes	28	60.9
No	18	39.1
Total	**46**	**100.0**

4.3.6 Item 20: Respondents informed of the possible transmission of HIV to the baby through breastfeeding

All respondents (N=46) answered this item; 91.3% (n=42) had the transmission of HIV through breastfeeding explained to them, while 8.7% (n=4) did not have it explained (see table 4.15).

Table 4.15 Respondents had the explanation on transmission of HIV through breastfeeding (N=46)

Transmission of HIV through breastfeeding explained	Frequency	Percent
Yes	42	91.3
No	4	8.7
Total	**46**	**100.0**

4.3.7 Item 21: Person who influenced respondent to decide on exclusive breastfeeding

A total of 46 (N=46) responded; 4.3% (n=2) were influenced by a partner, 45.7% (n=21) were influenced by the health worker and 50% (n=23) were not influenced as they decided on their own. A traditional healer or a friend did not influence any respondent to decide on exclusive breastfeeding (see figure 4.6).

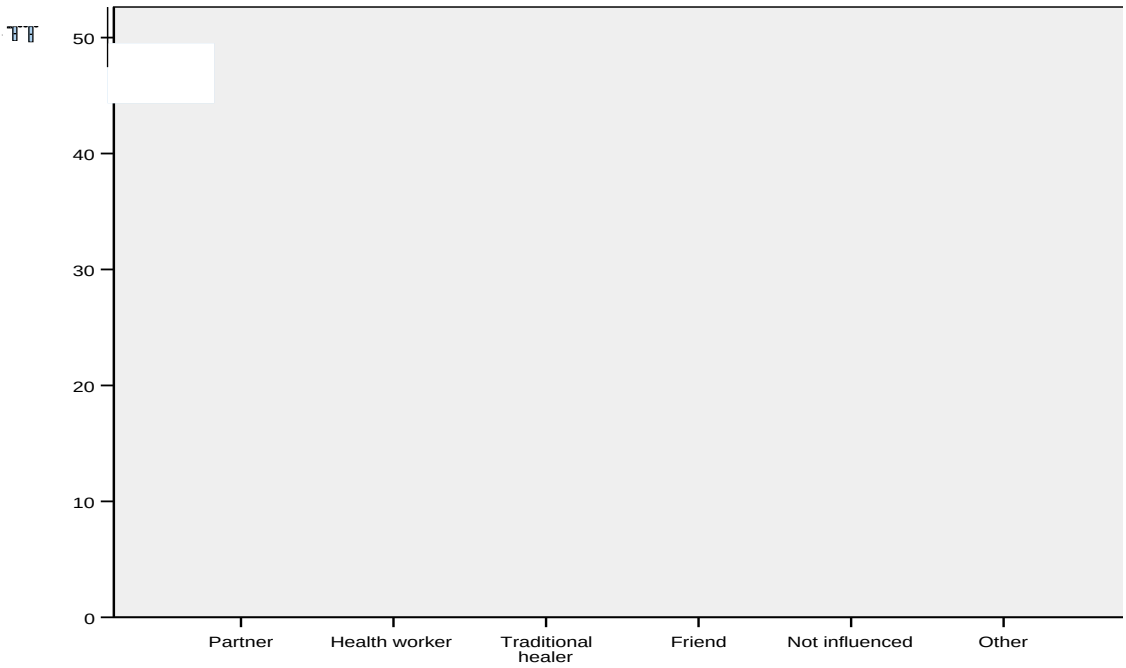

Figure 4.6 Person who influenced respondent to decide on exclusive breastfeeding (N=46)

4.3.8 Item 22: Respondents attended individual confidential sessions with counsellor

All 46 (N=46) respondents answered the item. Of these 46 respondents 87% (n=40) had an individual session with the counsellor and 13% (n=6) did not attend the session (see table 4.16).

Table 4.16 Respondents attended individual confidential sessions with counsellor (N=46)

Attended individual session with counsellor	Frequency	Percent
Yes	40	87.0
No	6	13.0
Total	**46**	**100.0**

4.3.9 Item 23: Respondents attended the group information session

A total of 46 (N=46) respondents answered this item. There were 73.9% (n=34) that attended the group information session and 26.1% (n=12) that did not attend (see table 4.17).

Table 4.17 Respondents who attended the group information session (N=46)

Attended group information session	Frequency	Percent
Yes	34	73.9
No	12	26.1
Total	**46**	**100.0**

4.3.10 Item 24: The day respondents were given blood results

All the 46 respondents (N=46) answered this question. There were 71.7% (n=33) that were given results on the same day of testing and the other 28.3% (n=13) were given results during the next visit (see table 4.18).

Table 4.18 The day respondents were given blood results (N=46)

Respondents were given results on this day	Frequency	Percent
The same day of testing	33	71.7
During the next visit	13	28.3
Total	**46**	**100.0**

4.3.11 Item 25: Respondents' partner was also called in for counselling and testing

Out of a total of 100% (N=46) respondents, 17.4% (n=8) had their partners coming in for testing while 82.6% (n=38) did not come in (see table 4.19).

Table 4.19 Respondents' partner called in for counselling and testing (N=46)

Partner called in for counselling and testing	Frequency	Percent
Yes	8	17.4
No	38	82.6
Total	**46**	**100.0**

4.3.12 Item 26: Infant feeding choices were explained to the respondents

A total of 46 respondents (N=46) answered this item. The feeding choices were explained to 84.8% (n=39) of the respondents after testing, while 15.2% (n=7) had no explanation (see table 4.20).

Table 4.20 Infant feeding choices were explained to respondent after testing (N=46)

Infant feeding choices explained	Frequency	Percent
Yes	39	84.8
No	7	15.2
Total	**46**	**100.0**

4.3.13 Item 27: Feeding options that were explained to respondents

Of the respondents 87% (n=40) indicated that exclusive breastfeeding was explained to them, 84.8% (n=39) had exclusive formula feeding explained and 26.1% (n=12) answered "Yes" to mixed or complementary feeding. In one case (2.2%) feeding options were not explained (see figure 4.7).

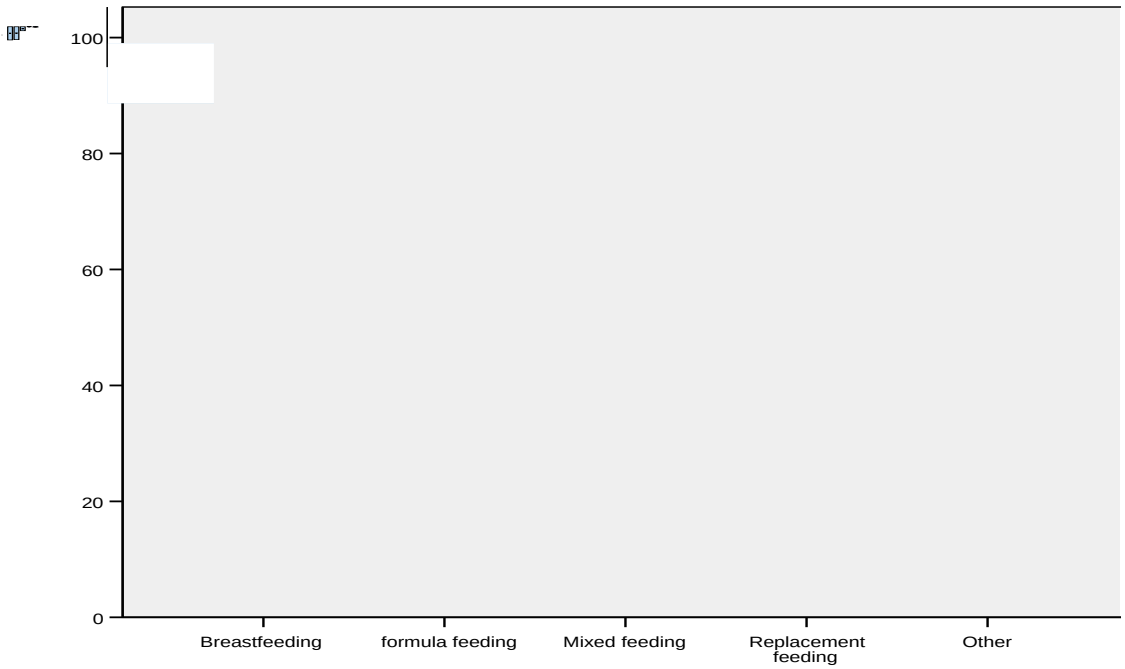

Figure 4.7 Feeding options that were explained to respondents (N=46)

4.3.14 Item 28: Respondents' partner was included in the counselling session regarding feeding options

Of a total of 46 (N=46) respondents that answered this item, only 2 respondents (4.3%) said their partners were included in the counselling session on feeding options; the other 44 (95.7%) respondents' partners were not included (see table 4.21).

Table 4.21 Respondents' partner was included in the counselling session regarding feeding options

Partner included in session regarding feeding options	Frequency	Percent
Yes	2	4.3
No	44	95.7
Total	**46**	**100.0**

4.3.15 Item 29: Exclusive breastfeeding was discussed with respondent during individual counselling

All the respondents answered this question (N=46). Exclusive breastfeeding was discussed with 78.3% (n=36) of the respondents, while 21.7% (n=10) answered “No” to the question of whether exclusive breastfeeding was discussed with them (see table 4.22).

Table 4.22 Exclusive breastfeeding was discussed with respondent during individual counselling (N=46)

Exclusive breastfeeding was discussed during individual counselling	Frequency	Percent
Yes	36	78.3
No	10	21.7
Total	**46**	**100.0**

4.3.16 Item 30: Information given to respondents on exclusive breastfeeding

Of the respondents, 78.3% (n=36) were given information on exclusive breastfeeding; 69.6% (n=32) were given information on the benefits of exclusive breastfeeding, 69.6% (n=32) were given information on conditions under which they should not exclusively breastfeed and 63% (n=29) of the respondents were informed on when to stop exclusive breastfeeding (see figure 4.8). The other 2.2% (n=1) were informed on formula feeding

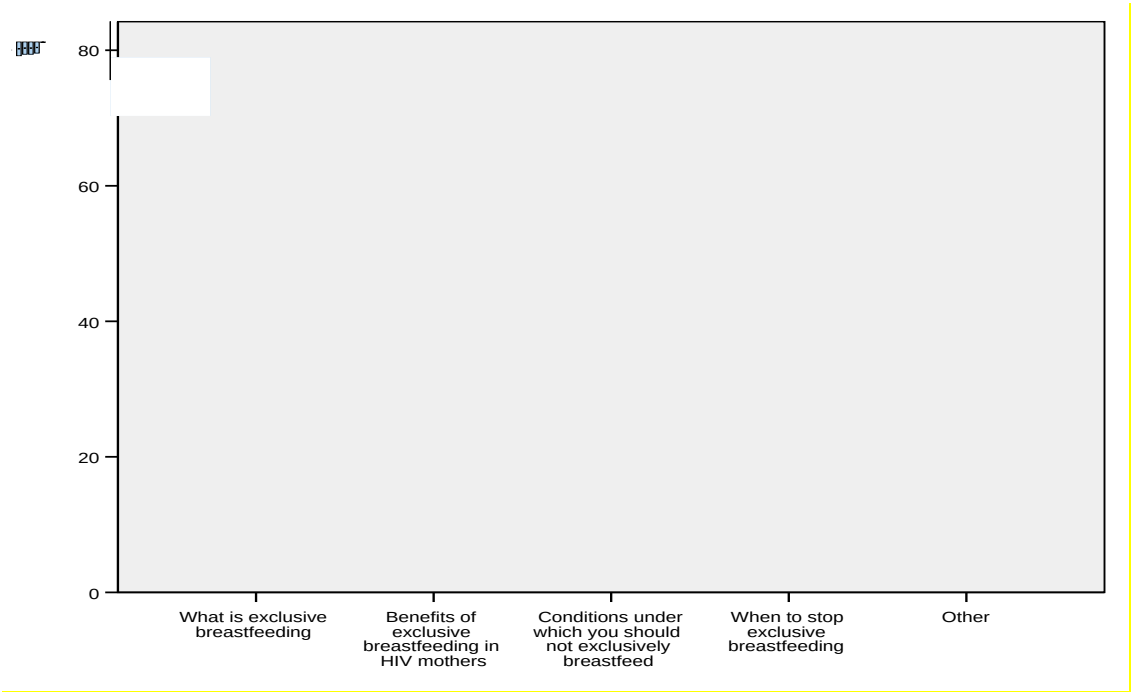

Figure 4.8 Information given to respondents on exclusive breastfeeding (N=46)

4.3.17 Item 31: Exclusive formula feeding was explained to respondents

All the respondents answered this question (N=46). Exclusive formula feeding was explained to 82.6% (n=38) of the respondents, while 17.4% (n=8) said it was not explained to them (see table 4.23).

Table 4.23 Exclusive formula feeding was explained to the respondents (N=46)

Exclusive formula feeding was explained to respondents		Frequency	Percent
Valid	Yes	38	82.6
	No	8	17.4
	Total	**46**	**100.0**

4.3.18 Item 32: Information received by respondents on formula

The information received by respondents was as follows: 84.8% (n=39) received information on what exclusive formula feeding is, 71.7% (n=33) said they had information on preparation of the formula, 43.5% (n=20) said they were told about the danger signs for a baby on formula and one (2.2%) was told about the cost of the formula (see figure 4.9).

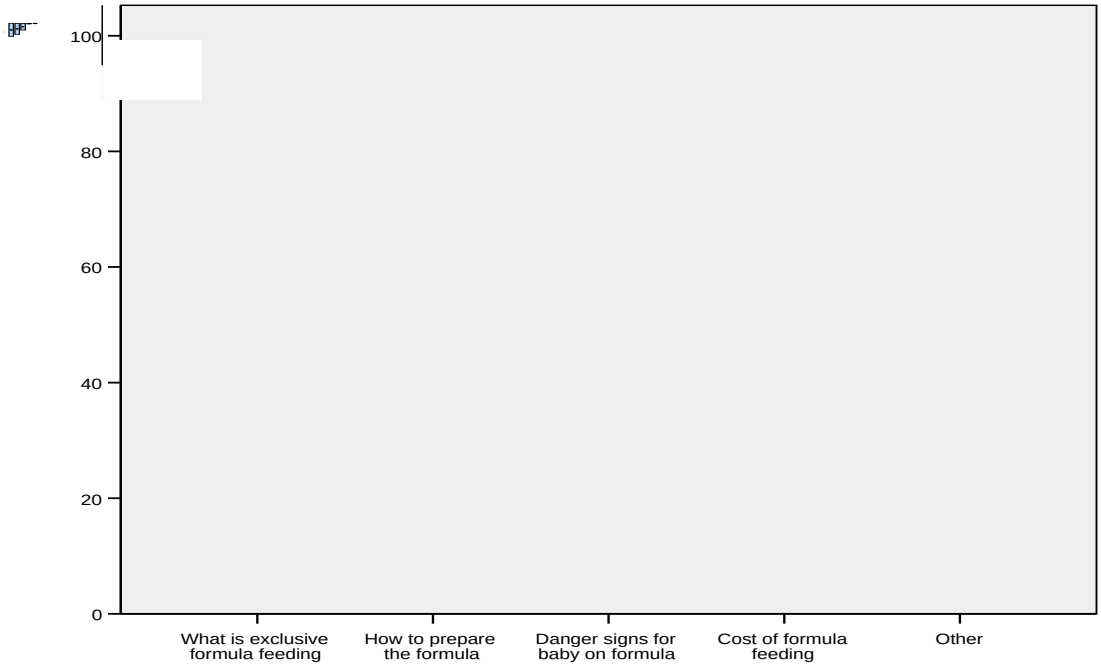

Figure 4.9 Information received by respondents on formula (N=46)

4.3.19 Item 33: The attitude of the health workers during counselling session

All the 46 (N=46) respondents answered this item. There were 15.2% (n=7) respondents who said they were polite, 80.4% (n=37) said the health workers were friendly and approachable, while 4.3% (n=2) said they were hurried and impatient (see table 4.24).

Table 4.24 Attitude of the health workers during counselling session (N=46)

Attitude of the health worker during counselling	**Frequency**	**Percent**
Polite	7	15.2
Friendly and approachable	37	80.4
Hurried and impatient	2	4.3
Total	**46**	**100.0**

4.3.20 Item 34: Respondents asked (were allowed to ask) questions during the counselling session

A total of 46 respondents (N=46) answered; 43.5% (n=20) responded that they were given the opportunity to ask, or asked, questions and 56.5% (n=26) did not have the opportunity or did not ask questions (see table 4.25).

Table 4.25 Respondent asked or allowed to ask questions during counselling session (N=46)

Asked or allowed to ask questions during counselling session	Frequency	Percent
Yes	20	43.5
No	26	56.5
Total	**46**	**100.0**

4.3.21 Item 35: Respondents' questions were answered to their satisfaction

All 100% (N=20) of the respondents that asked questions said that their questions were answered to their satisfaction (see table 4.26).

Table 4.26 Respondents' questions were answered to their satisfaction (N=20)

Questions answered to respondents' satisfaction	Frequency	Percent
Yes	20	100.0
Total	**20**	**100.0**

4.3.22 Item 36: Respondents' reasons for choosing to exclusively breastfeed

When asked why the respondents chose to exclusively breastfeed, 56.5% (n=26) said breast milk is good for the baby, 10.9% (n=5) said they chose exclusive breastfeeding as there was no clean running water from the tap, 19.6% (n=9) said they did it to ensure adequate bonding, 30.4% (n=14) said it was practised in their community, 56.5% (n=26) feared the stigma attached to formula feeding by HIV positive mothers, 32.6% (n=15) said they did not disclose their HIV status to relatives, 4.3% (n=2) said there was

inadequate formula supply at the clinic, 4.3% (n=2) said they chose exclusive breastfeeding as it has no cost implications and 8.7% (n=4) said they chose exclusive breastfeeding as they did not know that they were HIV positive and that the baby was crying (see table 4.27).

Table 4.27 Respondents' reasons for choosing to exclusively breastfeed (N=46)

Reason for choosing to exclusively breastfeed	Yes	Percent
Breast milk is good for the baby	26	56.5
No clean running water from the tap for formula	5	10.9
To ensure adequate bonding with baby	9	19.6
Breastfeeding is practised in my community	14	30.4
Fear of the stigma attached to formula feeding by HIV positive mothers	26	56.5
Did not disclose my HIV status to relatives	15	32.6
Inadequate formula milk supply at the clinic	2	4.3
It has no cost implications	2	4.3
Other	4	8.7

4.3.23 Item 37: Respondent was willing/comfortable to exclusively breastfeed despite the HIV status

All the (N=46) respondents answered this question. Only 15.2% (n=7) said they were willing to breastfeed/comfortable with breastfeeding despite their HIV status while 84.8% (n=39) said they were not comfortable (see table 4.28).

Table 4.28 Respondent was willing/comfortable to exclusively breastfeed despite the HIV status (N=46)

Respondent comfortable to exclusively breastfeed	Frequency	Percent
Yes	7	15.2
No	39	84.8
Total	**46**	**100.0**

4.3.24 Item 38 Reasons that made respondent uncomfortable

Of the 39 respondents that said that they felt uncomfortable, 84.6% (n=33) feared transmission of the HIV to the baby, 5.1% (n=2) said the breasts were painful, 7.7% (n=3) did not know how to put the baby on the breast and 2.6% (n=1) said she did not understand exclusive breastfeeding (see figure 4.10).

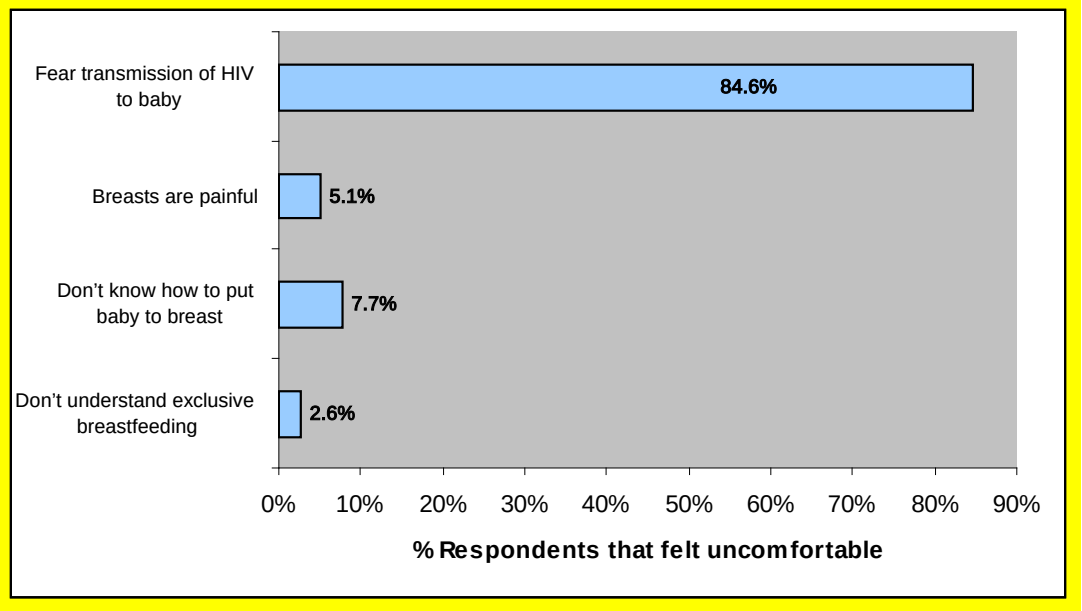

Figure 4.10 Reasons that made respondent uncomfortable (N=46)

4.3.25 Item 39: Respondents' partner supported exclusive breastfeeding

All 46 (N=46) respondents answered the question. Exclusive breastfeeding was supported by 65.2% (n=30) of the respondents' partners, while 34.8% (n=16) did not support it (see table 4.29).

Table 4.29 Respondents' partner supported exclusive breastfeeding (N=46)

Partner supported exclusive breast-feeding	Frequency	Percent
Yes	30	65.2
No	16	34.8
Total	**46**	**100.0**

4.3.26 Item 40: Reasons why partner was not supportive of exclusive breastfeeding

Of the 16 respondents who answered No to the question on whether their partner supported exclusive breastfeeding, 31.3% (n=5) stated that their partner feared transmission of HIV to the baby, 12.5% (n=2) thought HIV did not exist, 6.3% (n=1) had disappeared after HIV disclosure, 6.3% (n=1) said that they fought a lot, with no chance of discussion on infant feeding, 18.8% (n=3) did not disclose the status to partner, 6.3% (n=1) supported exclusive breastfeeding initially then changed his mind, 12.5% (n=2) disappeared after the pregnancy was reported and 25% (n=4) said the partner was not involved in counselling, therefore there was no discussion (see table 4.30).

Table 4.30 Reasons why partner was not supportive of exclusive breastfeeding (N=18)

Reasons why partner was not supportive of exclusive breastfeeding	Frequency	Percent
Feared transmission of HIV to baby	5	31.3
Partner thinks HIV does not exist	2	12.5
Partner disappeared after pregnancy was reported	2	12.5
Was not involved in counselling therefore no discussion	4	25.0
Partner disappeared after HIV disclosure	1	6.3
Fights a lot with partner with no chance of discussion	1	6.3
Partner supported exclusive breastfeeding initially then changed his mind	1	6.3
Did not disclose status to partner	3	18.8
Total	**18**	**100.0**

4.3.27 Item 41: Health worker visited the respondent in the ward after the delivery of the baby to ensure that respondent practised exclusive breastfeeding

All the respondents (N=46) answered the question. There were 43.5% (n=20) respondents that said that the health worker visited them to ensure that exclusive breastfeeding was practised, while 56.5% (n=26) said they did not get the postnatal visit (see table 4.31).

Table 4.31 Postnatal follow-up by health worker to ensure exclusive breastfeeding (N=46)

Postnatal follow-up for exclusive breastfeeding	Frequency	Percent
Yes	20	43.5
No	26	56.5
Total	**46**	**100.0**

4.3.28 Item 42: Frequency of health worker postnatal visit

All the respondents (N=46) answered the item; 17.4% (n=8) had one postnatal visit, 21.7% (n=10) had 2 visits, 2.2% (n=1) had 3 visits, 2.2% (n=1) had more than 3 visits and the other 56.5% (n=26) never had a postnatal visit by the health worker (see table 4.32).

Table 4.32 Frequency of health worker postnatal visit (N=46)

Frequency of health worker postnatal visit	Frequency	Percent
Once	8	17.4
Twice	10	21.7
Three times	1	2.2
More than three times	1	2.2
Not at all	26	56.5
Total	**46**	**100.0**

4.4 SECTION C: COMMUNICATING HIV STATUS

The respondents were asked if they were able to communicate about their HIV status, the people they communicated with and if not, the reasons why they were not able to disclose their status.

4.4.1 Item 43: Respondents' ability to communicate with people about their HIV status

All the respondents (N=46) answered this question. Of the respondents, 37% (n=17) said they were able to communicate with people about their HIV status while 63% (n=29) said they were not able to do so (see table 4.33).

Table 4.33 Respondents' ability to communicate with people about their HIV status (N=46)

Respondents' ability to communicate HIV status	Frequency	Percent
Yes	17	37.0
No	29	63.0
Total	**46**	**100.0**

4.4.2 Item 44: People that respondent informed of HIV status

Respondents who informed their partners represented 34.3% (n=16), 17.4% (n=8) said they informed their mother, 19.6% (n=9) informed a brother or sister, 13% (n=6) informed a friend, 15.2% (n=7) informed no one, 2.2% (n=1) informed their children and 10.9% (n=5) informed the doctor or health worker (see table 4.34). The 17 respondents who communicated their HIV positive status disclosed it to more than one person (see table 4.34).

Table 4.34 People that respondent informed of HIV status (N=46)

Whom did you inform of your HIV status?		Yes	%
44.1	Partner	16	34.8
44.2	Mother	8	17.4
44.3	Brother or sister	9	19.6
44.4	Friend	6	13.0
44.5	No one	29	63.0
44.6	Children	1	2.2
44.7	Doctor/health care worker	5	10.9
Total		**46**	**100.0**

4.4.3 Item 45: Reasons why respondent was unable to communicate HIV status

In response to the question to the 29 respondents who said they could not communicate their status, on why the respondents were unable to communicate their HIV status, 6.9% (n=2) said they feared rejection by the family, 17.24% (n=5) said they were unable to communicate their HIV status due to the stigma attached, 62.1% (n=18) said they feared humiliation and 13.8% (n=4) had other reasons like not wanting to hurt relatives and parents and fear of people talking about what they had confided; others were unsure of the reason (see figure 4.11).

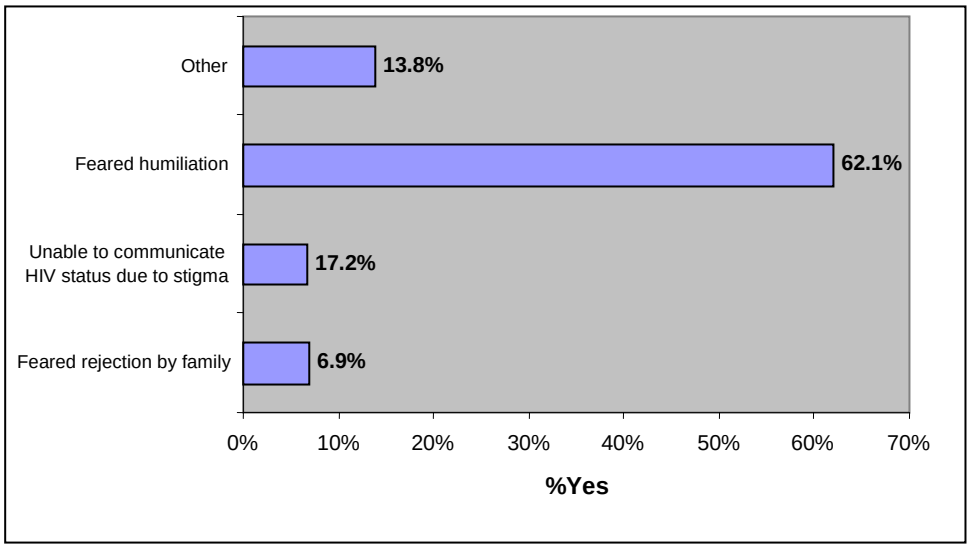

Figure 4.11 Reasons why respondent was unable to communicate HIV status (N=46)

4.4.4 Item 46: Respondents consulted traditional healer about pregnancy and HIV status

All the respondents answered this (N=46); 13% (n=6) respondents said they had consulted a traditional healer about the pregnancy and their HIV status, while 87% (n=40) did not consult a traditional healer.

Table 4.35 Respondents consulted the traditional healer about pregnancy and HIV (N=46)

Consulted traditional healer about pregnancy and HIV	Frequency	Percent
Yes	6	13.0
No	40	87.0
Total	**46**	**100.0**

4.4.4 Item 47: Information suggested by the traditional healer

Of the 6 respondents who did consult a traditional healer, 50% (n=3) said HIV can be treated with herbs like other diseases and suggested the African Potato, while 16.6% (n=1) responded that the healer said that the placenta had not been removed after the previous baby, hence this illness; 33.3% (n=2) said the healer had said the patient was bewitched (see table 4.36).

Table 4.36 Information suggested by the traditional healer (N=6)

Information suggested by the traditional healer	Frequency	Percent
HIV can be treated with herbs like other diseases and suggested the African Potato	3	50.0
The healer said that the placenta was not removed after the previous baby	1	16.6
Traditional healer said the patient was bewitched	2	33.3
Total	**6**	**100.0**

4.5 SECTION D: BREASTFEEDING PRACTICE

4.5.1 Item 46a: Duration of exclusive breastfeeding after delivery

All the respondents answered this question (N=46). There were 10.9% (n=5) of the respondents who carried on with exclusive breastfeeding for 1 week, 6.5% (n=3) breastfed for 2 weeks, 15.2% (n=7) breastfed for 3 weeks, 13% (n=6) for 4 weeks, 23.9% (n=11) for 6 weeks and 30.4% (n=14) breastfed for 8 weeks/3 months, 2 days (see table 4.37).

Table 4.37 Duration of exclusive breastfeeding after delivery (N=46)

Duration of exclusive breastfeeding after delivery	Frequency	Percent
One week	5	10.9
Two weeks	3	6.5
Three weeks	7	15.2
Four weeks	6	13.0
Six weeks	11	23.9
Other	14	30.4
Total	**46**	**100.0**

4.5.2 Item 47a: How the respondents practised breastfeeding

A total of 46 respondents answered item number 47. Of the respondents 13% (n=6) breastfed exclusively, 10.9% (n=5) practised mixed feeding, 65.2% (n=30) were not breastfeeding any more and 10.9% (n=5) used other methods of mixed feeding such as porridge and breast milk or breast and fruit juice (see table 4.38).

Table 4.38 How respondents practised breastfeeding (N=46)

How respondents practised breastfeeding	Frequency	Percent
Exclusively	6	13.0
Mixed feeding (milk and formula)	5	10.9
Not breastfeeding any more	30	65.2
Other	5	10.9
Total	**46**	**100.0**

4.5.3 Item 48: Reasons for respondents' breastfeeding practices

Only 21 respondents answered this item. Exclusive breastfeeding "because it is the correct way of preventing HIV transmission to the baby" was the response of 19.6% (n=9) of the respondents, 8.7% (n=4) stopped breastfeeding as they went back to work, 4.3% (n=2) stopped due to family pressure, 8.7% (n=4) stopped due to the stigma attached to exclusive breastfeeding and being too ill to breastfeed, 10.9% (n=5) stated that breast milk was not enough for the baby and 10.9% (n=5) gave other reasons like "looking for work" (see table 4.39).

Table 4.39 Reasons for respondents' breastfeeding practices (N=21)

Reasons for your current breastfeeding practices	Yes	%
48.1 Exclusive breastfeeding is the correct way of preventing HIV transmission to baby	9	19.6
48.2 Stopped breastfeeding because I went back to work	4	8.7
48.3 Family pressure to stop breastfeeding	2	4.3
48.4 Stigma attached to exclusive breastfeeding	1	2.2
48.5 Was too ill to breastfeed	1	2.2
48.6 I was feeling ill	2	4.3
48.7 Breast milk was not enough for the baby	5	10.9
48.8 Other	5	10.9

4.5.4 Item 49: Respondents admitted to hospital or clinic for an illness while breastfeeding

Out of 46 respondents only 8.7% (n=4) were admitted to a hospital or clinic while still breastfeeding, 91.3% (n=42) were not admitted (see table 4.40).

Table 4.40 Respondents admitted to hospital or clinic for an illness while breastfeeding (N=46)

Respondent admitted to hospital for an illness while breastfeeding	Frequency	Percentage
Yes	4	8.7
No	42	91.3
Total	**46**	**100.0**

4.5.6 Item 50: Respondents' illness after delivery

All 46 respondents answered this question. Only 15.2% (n=7) said that they were ill after delivery of the baby while the other 84.8% (n=39) were not ill (see table 4.41).

Table 4.41 Respondents' illness after delivery (N=46)

Respondent was ill after delivery	Frequency	Percent
Yes	7	15.2
No	39	84.8
Total	**46**	**100.0**

4.5.7 Item 51: Respondents' type of illness

Of the 7 respondents who were ill, 4.3% (n=2) complained of coughing and 10.9% (n=5) had illness classified under the other options like having severe vaginal infections and having had a Caesarean Section (see table 4.42).

Table 4.42 Respondents' type of illness (N=46)

Type of illness	Frequency	Percent
Coughing	2	4.3
Other	5	10.9
Not applicable	39	84.8
Total	**46**	**100.0**

4.5.8 Item 52: Respondents breastfed during their admission

All respondents who were admitted 15.2% (n=7) continued to breastfeed their babies, then stopped; 84.8% (n=39) were not admitted (see table 4.43).

Table 4.43 Respondents breastfed during their admission (N=46)

Breastfed during their admission	Frequency	Percent
Yes	7	15.2
Not admitted	39	84.8
Total	**46**	**100.0**

4.5.9 Item 53: Respondents' reasons for stopping breastfeeding during admission

Of the 7 respondents who were admitted, one (14.3%) said she was too ill, one other (14.3%) said she was too tired to breastfeed, 42.9% (n=3) breastfed during admission, and were advised by staff not to breastfeed and 28.6% (n=2) gave another option that included Caesarean Section (see table 4.44).

Table 4.44 Respondents' reasons for not breastfeeding during admission (N=7)

Reasons for not breastfeeding during admission		Frequency	Percent
Valid	Too ill	1	14.3
	Too tired	1	14.3
	Medical staff advised to stop breastfeeding	3	42.9
	Other option	2	28.6
	Total	**7**	**100.0**

4.5.10 Item 54: Respondents' feeding practices during admission

Of the 7 respondents who practised breastfeeding during admission, one respondent (14.3%) had started but stopped breastfeeding, 57.1% (n=4) stated that they changed to formula feeding, 14.3% (n=1) began on formula and breast and one respondent (14.3%) had started to breastfeed during admission, stopped, and then started breastfeeding at home. The other 39 respondents were not admitted (see table 4.45).

Table 4.45 Respondents' feeding practices during admission (N=7)

Breastfeeding practices during admission		Yes
54.1	Stopped breastfeeding	1
54.2	Began giving formula feed	4
54.4	Began formula and breast	1
54.5	Other	1

4.5.11 Item 55: Respondents' breast or breastfeeding problems

All (N=46) respondents answered this question; 34.8% (n=16) of the respondents said that they had breast or breastfeeding problems, while 65.2% (n=30) had no problems (see table 4.46).

Table 4.46 Respondents' breast or breastfeeding problems (N=46)

Respondents breast or breastfeeding problems	Frequency	Percent
Yes	16	34.8
No	30	65.2
Total	**46**	**100.0**

4.5.12 Item 56: Difficulties experienced by respondents during breastfeeding

The following difficulties were experienced during breastfeeding by the respondents: 68.9% (n=11) experienced painful breasts, 12.5%% (n=2) had swollen and hot breasts, 6.3% (n=1) had cracked nipples and 12.5% (n=2) said the breast milk was not enough (see figure 4.12).

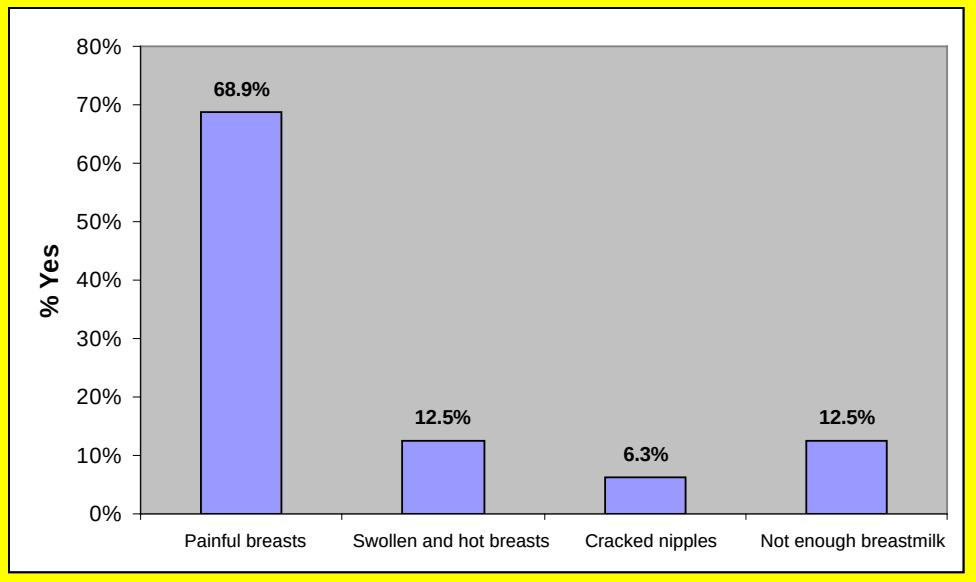

Figure 4.12 Difficulties experienced by respondents during breastfeeding (N=46)

4.5.13 Item 57: Respondents noticed a change in breastfeeding patterns within the community since the HIV pandemic

All the 46 respondents answered the question. There were 67.4% (n=31) of the respondents that said they had noticed a change and 32.6% (n=15) said they did not notice any changes (see table 4.47).

Table 4.47 Respondents noticed a change in breastfeeding patterns since HIV pandemic (N=46)

Noticed a change in breastfeeding patterns since HIV pandemic	Frequency	Percent
Yes	31	67.4
No	15	32.6
Total	**46**	**100.0**

4.5.14 Item 58: Changes noticed by respondents in baby feeding patterns since HIV pandemic

Of the 45 respondents to the question, 46.7% (n=21) noticed a reluctance to breastfeed, 31.1% (n=14) said breastfeeding is done for a shorter time, 2.2% (n=1) said exclusive breastfeeding is done, 4.4% (n=2) said mixed feeding is practised and 13% (n=6) said formula feeding is practised, while one (2.2%) said she was not sure (see figure 4.13).

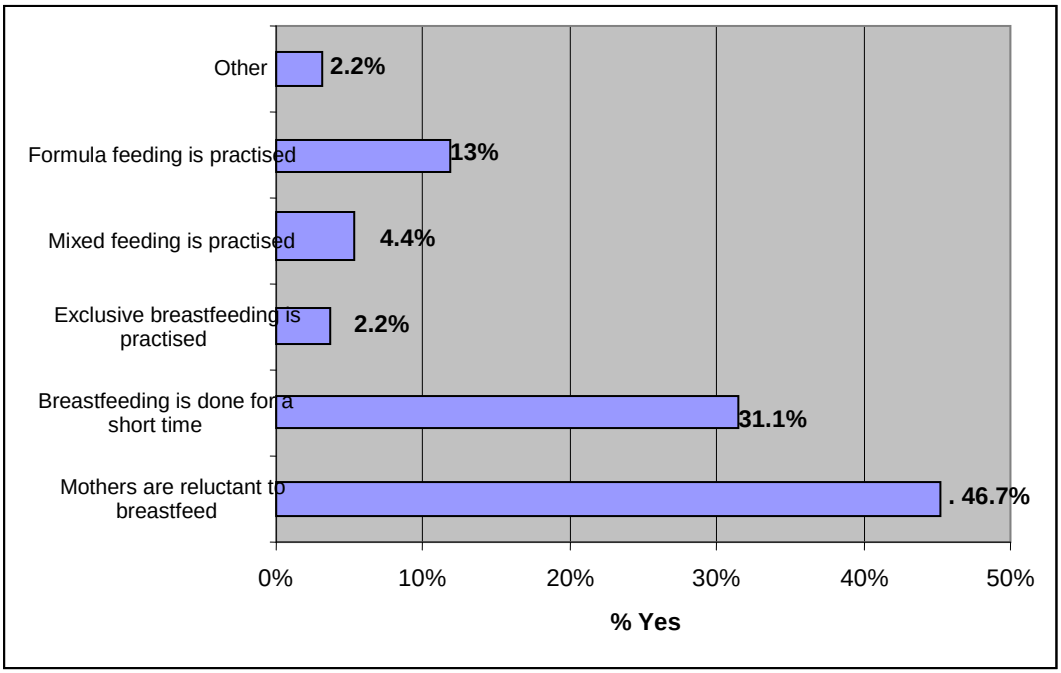

Figure 4.13 Changes noticed by respondents in baby feeding patterns since HIV pandemic (N=46)

4.5.15 Item 59: Respondent gave baby herbal drinks with or between meals

All the respondents (N=46) answered this item. There were 60.9% (n=28) of the respondents that gave the babies herbal drinks and 39.1% (n=18) denied giving the babies herbal drinks (see table 4.48).

Table 4.48 Respondent gave baby herbal drinks with or between meals (N=46)

Respondent gave baby herbal drinks with or between meals	Frequency	Percent
Yes	28	60.9
No	18	39.1
Total	**46**	**100.0**

4.5.15 Item 60: Respondents encouraged to give baby herbal drinks

There were 28 respondents who answered this question. There were 41.3% (n=19) who were encouraged by their mothers, 8.7% (n=4) were encouraged by friends, 4.4% (n=2) by a traditional healer and a neighbour, 6.5% (n=2) by partner and one decided to do it by herself. The question was not applicable to 39.1% (n=18) of the respondents as they answered No in the previous question (see table 4.49).

Table 4.49 Respondents encouraged to give baby herbal drinks (N=46)

Respondents encouraged to give baby herbal drinks	Frequency	Percent
Friend	4	8.7
Mother	19	41.3
Traditional healer	1	2.2
Neighbour	1	2.2
Other	3	6.5
Not applicable	18	39.1
Total	**46**	**100.0**

4.5.16 Item 61: Purpose of the herbal drinks given to baby

All respondents answered the question (N=46). There were 2.2% (n=1) of the respondents that did not know the reason, 4.4% (n=2) said it was for healing of the fontanelle, 19.6% (n=9) said it was to prevent restlessness in the baby and help the baby to sleep, 32.6% (n=15) said it was to protect the baby against evil spirits, 17.4% (n=8) said it helped with abdominal cramps, 4.4% (n=2) said it helped with healing of the umbilicus, 4.4% (n=2) said it cleared the greenish stools after birth and 15.2% (n=7) said it makes the baby strong. The 18 respondents who did not give herbal drinks to their babies gave reasons why they would administer it to their babies (see table 4.50).

Table 4.50 Purpose of the herbal drinks given to baby (N=46)

Purpose of the herbal drinks	Frequency	Percent
Did not know	1	2.2
Healing of the fontanelle	2	4.4
Prevent restlessness and helps baby to sleep	9	19.6
Protect baby against evil spirits	15	32.6
Help with abdominal cramps	8	17.4
Help with healing of the umbilicus	2	4.4
Clear the greenish stools after birth	2	4.4
Make baby strong	7	15.2
Total	**46**	**100.0**

4.5.17 Item 62: Respondents' culture allows sexual relations with partner while still breastfeeding

All the respondents answered this question (N=46). There were 13% (n=6) respondents who said their culture allowed sexual relations with their partner during breastfeeding and 87% (n=40) said that their culture did not allow sexual relations with partners while still breastfeeding (see table 4.51).

Table 4.51 Respondents' culture allows sexual relations with partner while still breastfeeding (N=46)

Respondents' culture allows sexual relations with partner while still breastfeeding	Frequency	Percent
Yes	6	13.0
No	40	87.0
Total	**46**	**100.0**

4.5.18 Item 63: Reasons why culture does not allow sexual relations while breastfeeding

All the respondents answered the question (N=46). There were 34.8% (n=16) respondents that did not know the reason, 41.3% (n=19) said that the baby would be ill, 6.5% (n=3) said that the baby had to be 6 months of age before they could indulge, 2.2% (n=1) said the umbilical cord would take long to dry up, 2.2% (n=1) said it was allowed only with the husband and 2.2% (n=1) said that the baby would have contaminated milk (see table 4.52).

Table 4.52 Reasons why culture does not allow sexual relations while breastfeeding (N=46)

Reasons why culture does not allow sexual relations while breastfeeding	Frequency	Percent
Did not know	16	34.8
Baby will be ill	19	41.3
Baby has to be 6 months of age	3	6.5
Umbilical cord will take long to dry up	1	2.2
Allowed only with husband	1	2.2
Baby will have contaminated milk	1	2.2
TOTAL	**46**	**100.0**

4.5.19 Item 64: Respondents' cultural beliefs related to breastfeeding

A total of 46 respondents answered the item. Only 2.2% (n=1) of the respondents was not sure if her cultural beliefs related to breastfeeding while 87% (n=40) said breast milk was good for the baby as it would be healthy and strong, 8.7% (n=4) said it was not allowed to breastfeed if you fall pregnant and 2.2% (n=1) said it is allowed only for three years (see table 4.53).

Table 4.53 Respondents' cultural beliefs related to breastfeeding (N=46)

Respondents' cultural beliefs related to breastfeeding	Frequency	Percent
Not sure	1	2.2
Breast milk is good for baby	40	87.0
Not allowed if you fall pregnant while breastfeeding	4	8.7
Allowed for 3 years	1	2.2
Total	**46**	**100.0**

4.6 SECTION E: INFANT HEALTH

The respondents were asked to state the baby's weight, any problems encountered during breastfeeding, changes in feeding practices and indicate why exclusive breastfeeding was stopped.

4.6.1 Item 65: Respondents' baby's weight at birth

The entire respondent group answered (N=46). There were 10.9% (n=5) that had babies that weighed below 2.5 kg, 19.6% (n=9) weighed 2.5 kg, 47.8% (n=22) were above 2.5 kg and 21.7% (n=10) did not know the babies' weight at birth (see figure 4.14).

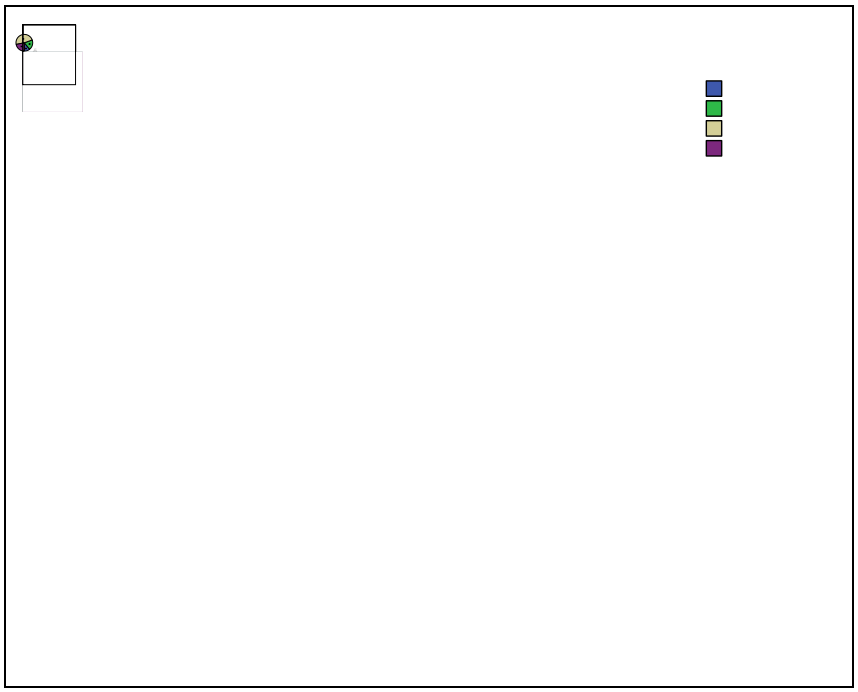

Figure 4.14 Respondents' baby's weight at birth (N=46)

4.6.2 Item 66: Timing of baby put to the breast

A total of 46 (N=46) answered this item. There were 15.2% (n=7) respondents that breastfed immediately after birth, 28.3% (n=13) said they breastfed two hours after birth and 56.5% (n=26) said they breastfed more than two hours after birth (see table 4.54).

Table 4.54 Timing of baby put to the breast (N=46)

Timing of baby put to the breast	Frequency	Percent
Immediately after birth	7	15.2
2 hours after birth	13	28.3
More than 2 hours after birth	26	56.5
Total	**46**	**100.0**

4.6.3 Item 67: Respondents' baby experienced problems in taking to the breast

All 46 respondents (N=46) answered this item; 71.7% (n=33) did not have problems, while 28.3% (n=13) had problems with babies taking to the breast (see table 4.55).

Table 4.55 Respondents' baby experienced problems in taking to the breast (N=46)

Respondents' baby experienced problems in taking to the breast	Frequency	Percent
Yes	13	28.3
No	33	71.7
Total	**46**	**100.0**

4.6.4 Item 68: Problems experienced by respondents when baby was put to the breast

Of the respondents who had problems, 76.9% (n=10) said the baby was unable to suck from the breast, 7.7% (n=1) said the baby slept too much, 7.7% (n=1) said the baby had had difficulty in breathing and 7.7% (n=1) said she was ill as a mother and could not put the baby to the breast (see table 4.56).

Table 4.56 Problems experienced by respondents when baby was put to the breast (N=13)

Problems experienced by respondents when baby was put to the breast	Yes	%
Baby unable to suck the breast	10	76.9
Baby slept too much	1	7.7
Baby had difficulty in breathing	1	7.7
Mother ill	1	7.7

4.6.5 Item 69: Respondents were helped by these people with breastfeeding the baby

Of the 44 respondents that answered this item, 56.5% (n=26) said they were helped by the nurse, 4.3% (n=2) were helped by their mothers and 34.8% (n=16) had help from a neighbour or from no one (see table 4.57).

Table 4.57 Respondents received help with breastfeeding the baby from (N=44)

Respondents received help with breastfeeding the baby from	Yes	Percent
Nurse	26	56.5
My mother	2	4.3
Other	16	34.8

4.6.6 Item 70: Respondents' baby was admitted to hospital

All the respondents (N=46) answered this item. There were 15.2% (n=7) respondents that said their babies were admitted in hospital and 84.8% (n=39) said that their babies were not admitted to hospital (see table 4.58).

Table 4.58 Respondents' baby was admitted to hospital (N=46)

Respondents' baby was admitted to hospital	Frequency	Percent
Yes	7	15.2
No	39	84.8
Total	**46**	**100.0**

4.6.7 Item 71: Respondents changed from exclusive breastfeeding when baby was admitted

Of the 7 respondents whose babies were admitted, 71.4% (n=5) said they changed from exclusive breastfeeding; 28.5% (n=2) said their baby was admitted but they did not remember and were not sure but they think they stopped exclusive breastfeeding (see table 4.59)

Table 4.59 Respondents changed from exclusive breastfeeding when baby was admitted (N=7)

Respondents changed from exclusive breast-feeding when baby was admitted	Frequency	Percent
Yes	5	71.4
Stopped exclusive breastfeeding	2	28.5
Total	**7**	**100.0**

4.6.8 Item 72: Changes made by respondents when baby was admitted

The question was not applicable to 87% (n=40) respondents, but 4.3% (n=2) said they stopped exclusive breastfeeding, 2.2% (n=1) gave other liquids and 6.5% (n=3) gave other mixtures like formula and breast milk (see table 4.60).

Table 4.60 Changes made by respondents when baby was admitted (N=46)

Changes made by respondents when baby was admitted	Frequency	Percent
Stopped exclusive breastfeeding	2	4.3
Began giving other liquids	1	2.2
Other	3	6.5
Not applicable	40	87.0
Total	**46**	**100.0**

4.6.9 Item 73: Respondents stopped exclusive breastfeeding during this period

All the respondents (N=46) changed from exclusive breastfeeding. There were 8.7% (n=4) respondents that said they stopped exclusive breastfeeding within one day after delivery, 10.9% (n=5) stopped one week after delivery, 6.5 % (n=3) stopped when baby fell ill, 67.4% (n=31) gave “other” time periods like 1 month after delivery, 10 weeks and 3 weeks after delivery (see table 4.61).

Table 4.61 Respondents stopped exclusive breastfeeding during this period (N=46)

Respondents stopped exclusive breastfeeding during this period	Frequency	Percent
Within one day after delivery	4	8.7
One week after delivery	5	10.9
Two weeks after delivery	3	6.5
When baby fell ill	1	2.2
Other	31	67.4
Did not stop	2	4.3
Total	**46**	**100.0**

4.6.10 Item 74: Respondents completely stopped exclusive breastfeeding every day and night

A total of 46 respondents answered this item; 82.6% (n=38) said they stopped exclusive breastfeeding every day and night while 17.4% (n=8) did not stop completely (see table 4.62).

Table 4.62 Respondents completely stopped exclusive breastfeeding every day and night (N=46)

Respondents completely stopped exclusive breastfeeding every day and night	Frequency	Percent
Yes	38	82.6
No	8	17.4
Total	**46**	**100.0**

4.6.11 Item 75: Respondents' reasons for stopping breastfeeding

All the respondents answered this question (N=46). There were 76.1% (n=35) respondents who said they feared transmitting the HIV to the baby, 2.2% (n=1) said the infant was too sick to be breastfed, 13% (n=6) were advised by the husband, 15.2% (n=7) had problems with their breasts, 4.3% (n=2) said they were too sick to breastfeed, 21.7% (n=10) were advised by the health worker to stop and 15.2% (n=7) had other reasons such as having to look for work, having to go back to work and not having enough milk (see figure 4.15).

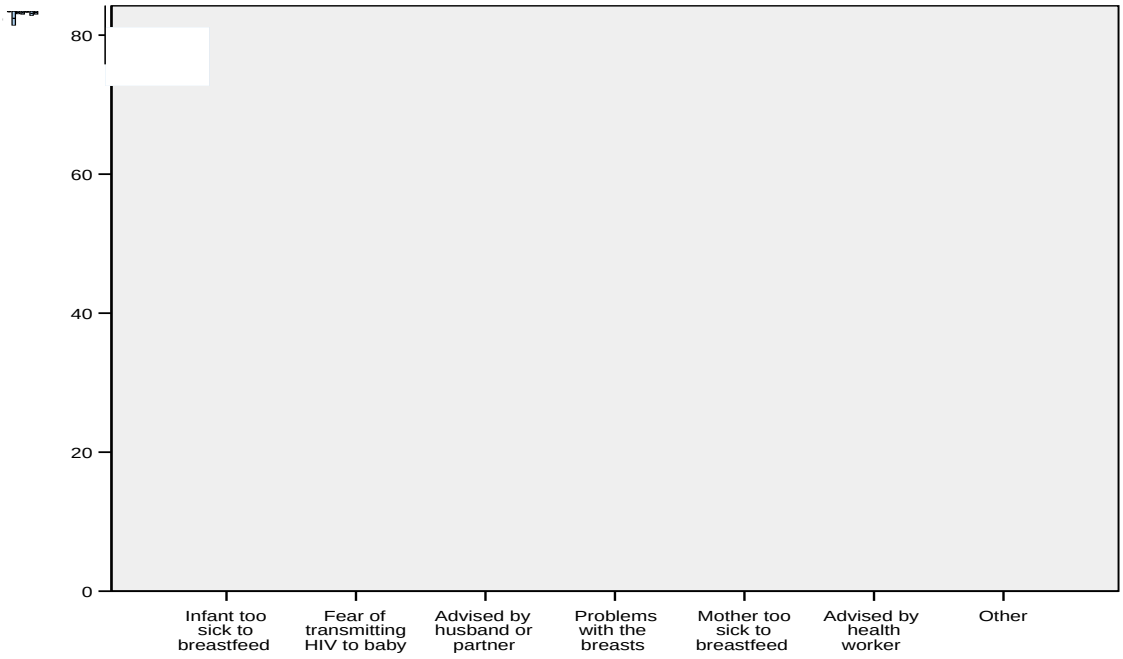

Figure 4.15 Respondents' reasons for stopping breastfeeding

4.7 SECTION F: KNOWLEDGE OF HIV AND INFANT FEEDING

This section of the study explored the respondents' knowledge of HIV and AIDS, mode of transmission of the disease and different feeding methods discussed during voluntary counselling and testing sessions.

4.7.1 Item 76: Respondents' knowledge of the definition of HIV

All the respondents answered the question (N=46). Of these 82.6% (n=38) stated that it is a virus that attacks the immune system, 6,5% (n=3) said it was an injury to the body, 2.2% (n=1) said it was a disease of the bewitched and 8.7% (n=4) said they did not know (see table 4.63).

Table 4.63 Respondents' knowledge of the definition of HIV

Definition of HIV	YES	Percent
Virus attacks the immune system	38	82.6
Injury to the body	3	6.5
Disease of the bewitched	1	2.2
Do not know	4	8.7
Total	**46**	**100.0**

4.7.2 Item 77: Respondents' knowledge of the definition of AIDS

All the respondents answered this (N=46). There were 30.4% (n=14) respondents that stated that HIV is the same as AIDS, 52.2% (n=24) said it was an advanced stage of HIV, 4.3% (n=2) said it was a skin disease, 6.5% (n=2) said it was a disease of swollen legs and 10.9% (n=5) said they did not know (see figure 4.16).

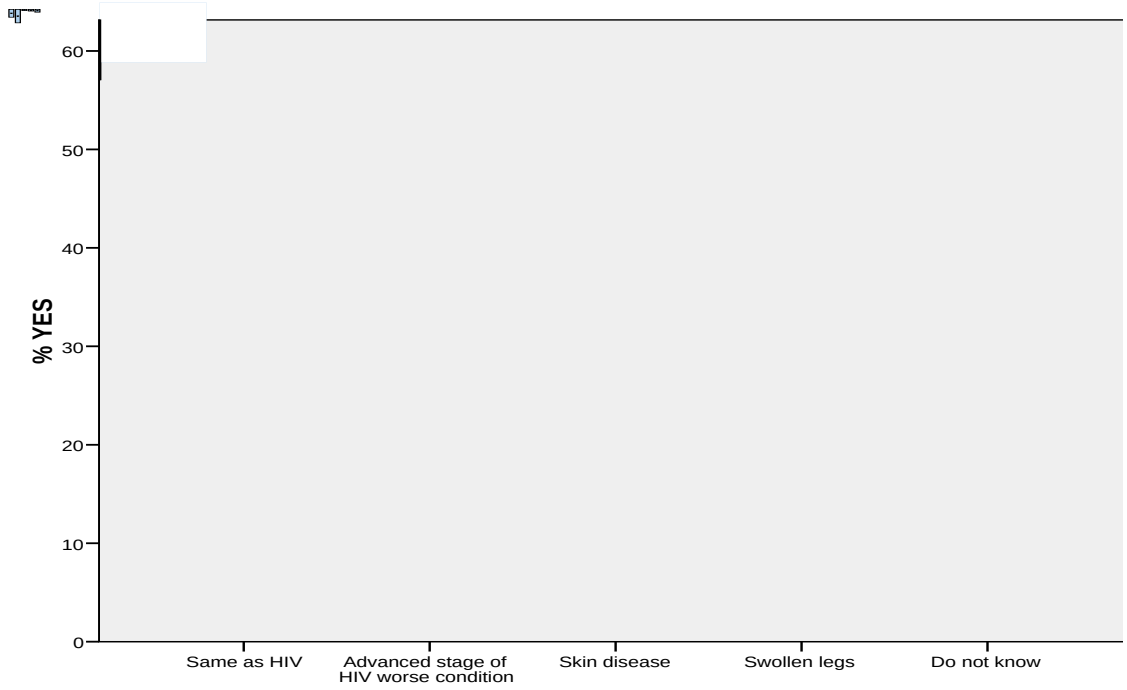

Figure 4.16 Respondents' knowledge of the definition of AIDS

4.7.3 Item 78: HIV transmission from person to person

All respondents (N=46) answered the question on how HIV is transmitted. All of the respondents (N=46) said transmission of HIV was through contact with blood and through sex, 97.8% (n=45) said that transmission can occur through breastfeeding, 2.2% (n=1) said through sharing of utensils, 13% (n=6) stated kissing, 82.6% (n=38) said transmission can occur during pregnancy from mother to baby, 8.7% (n=4) stated through saliva, 65.2% (n=30) agreed that if mother had sores on the breast transmission could occur and 73.9% (n=34) said sharing of razor blades could lead to HIV transmission (see figure 4.17).

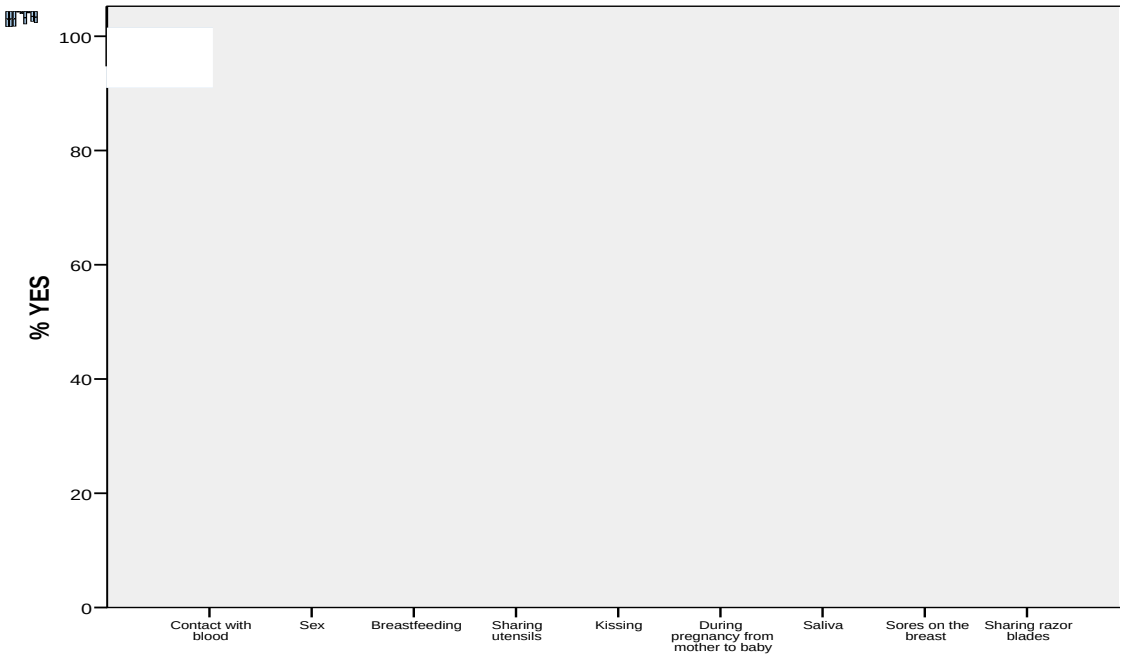

Figure 4.17 HIV transmission from person to person

4.7.4 Item 79: HIV is transmitted from mother-to-child through the following feeding methods

A total of 41 respondents answered this item. All the respondents that answered this question stated that mother-to-child transmission of HIV can occur during mixed feeding and through exclusive breastfeeding. There were 5 respondents that did not answer the question (see table 4.64).

Table 4.64 HIV is transmitted from mother-to-child through the following feeding methods (N=41)

HIV transmission from mother to child, feeding method	Yes	Percent
Mixed feeding	41	89.1
Exclusive breastfeeding	41	89.1

4.7.5 Item 80: Mother should not breastfeed when she has the following

A total of 46 respondents (N=46) answered the question; 95.7% (n=44) said the mother should not breastfeed when she had an abscess on the breast, 91.3% (n=42) said not when breasts were swollen and painful, 89.1% said no breastfeeding when breasts had a lump and secreted blood, 87% (n=40) said not when there were cracked nipples, 2.2% (n=1) said no breastfeeding even with normal breasts and 45.7% (n=21) said a mother should not breastfeed when she did not feel well (see table 4.65).

Table 4.65 Mother should not breastfeed when she has the following (N=46)

Mother should not breastfed when she has …	Yes	Percent
Abscess on the breast	44	95.7
Breasts swollen and painful	42	91.3
Breast has lump and secretes blood	41	89.1
Cracked nipples	40	87.0
Normal breasts	1	2.2
When she does not feel well	21	45.7

4.7.6 Item 81: HIV gains entry into the child during breastfeeding when:

A total of 46 respondents answered the question; 95.7% (n=44) stated that HIV gains entry to the child during breastfeeding when the baby has sores in the mouth, 84.4% (n=39) said when the nipples are cracked, 23.9% (n=11) said when the baby has diarrhoea and 56.5% (n=26) said HIV gains entry to baby when the breasts have an abscess (see table 4.66).

Table 4.66 HIV gains entry into the child during breastfeeding when (N=46)

HIV gain entry during breastfeeding when …	Yes	Percent
Baby has sores in the mouth	44	95.7
Nipples are cracked	39	84.8
Baby has diarrhoea	11	23.9
Breasts have abscess	26	56.5

4.7.7 Item 82: The HIV positive mother should practise exclusive breastfeeding for a period of

Of the 46 respondents that answered this question, 89.1% (n=41) said exclusive breastfeeding should be done for less than 4 months and 10.9% (n=5) said 4 months (see table 4.67).

Table 4.67 HIV positive mother should practice exclusive breastfeeding for a period of (N=46)

Period for which a HIV positive mother should practise exclusive breastfeeding	Frequency	Percent
Less than 4 months	41	89.1
4 months	5	10.9
Total	**46**	**100.0**

4.7.8 Item 83: Exclusive breastfeeding means

A total of 46 respondents answered this; 93.5% (n=43) stated that exclusive breastfeeding means giving the child only breast milk, 4.3% (n=2) said giving the child breast milk and other food and 2.2% (n=1) said it meant giving breast milk and herbs (see table 4.68).

Table 4.68 Exclusive breastfeeding means (N=46)

Exclusive breastfeeding means …	YES	%
Giving the child only breast milk	43	93.5
Giving the child breast milk and other food	2	4.3
Other	1	2.2

4.7.9 Item 84: Is breast milk good for the baby?

All the respondents (N=46) answered that breast milk is good for the baby.

Table 4.69 Is breast milk good for the baby? (N=46)

Is breast milk good for the baby?	Frequency	Percent
Yes	46	100.0

4.7.10 Item 85: Respondents' reasons why they would rather breastfeed the baby

All respondents answered this (N=46). There were 95.7% (n=44) that said breast milk is convenient without preparation, 69.6% (n=32) said bonding with the baby occurs, 58.7% (n=27) said breast milk is at the right temperature, 28.3% (n=13) said the baby is protected by antibodies in the milk, 4.3% (n=2) stated that they did not have clean water from the tap for formula milk, 32.6% (n=15) said they breastfed as family members would ask questions if they used formula, 2.2% (n-1) said breastfeeding was practised in the community, 21.7% (n=10) said it had no cost implication, 6.5% (n=3) said it was recommended by their mother and 6.5% (n=3) had other reasons, including that milk can be given at any time and it is safe (see table 4.70).

Table 4.70 Respondents' reasons why they would rather breastfeed the baby (N=46)

Respondents' reasons for breastfeeding baby		Yes	Percent
85.1	It is convenient without preparation	44	95.7
85.2	Bonding with the baby	32	69.6
85.3	Breast milk is at a right temperature and ready	27	58.7
85.4	Baby is protected by antibodies in milk	13	28.3
85.5	There is no clean water from the tap for formula milk	2	4.3
85.6	Family would ask questions if formula feeding	15	32.6
85.7	It is practised in our community	1	2.2
85.8	It was recommended by my mother	3	6.5
85.9	It has no cost implication	10	21.7
85.10	Other	3	6.5

4.8 SUMMARY

This chapter presented the data collected, the analysis and interpretation.

In chapter 5 the finding, limitations, recommendations and conclusion of the study done will be discussed.

CHAPTER 5

Findings, limitations, recommendations and conclusion

5.1 INTRODUCTION

This chapter outlines the purpose of the study, discusses the findings and limitations of the study and makes recommendations regarding the hospital management, midwifery practice, midwifery curricula, health education and also further research.

5.2 PURPOSE OF THE STUDY

The purpose of the study was to explore and describe the factors that altered the commitment of HIV positive clients who had opted to exclusively breastfeed their babies. The objectives of the study were the following:

- To describe the factors which altered the HIV infected clients' commitment to exclusive breastfeeding (EBF).
- Make recommendations to enhance exclusive breastfeeding to HIV positive clients.

A quantitative, explorative, non-experimental, descriptive design was used. The accessible population consisted of all the postnatal clients who attended the postnatal clinic and Paediatric Outpatients and were actually available for the study. The sample consisted of 46 respondents who attended the PMTCT programme and met the inclusion criteria. Data were collected from 46 respondents attending the postnatal clinic and Paediatric Outpatients using a structured interview schedule on a face-to-face basis. The structured interview schedule consisted of closed and open-ended questions. Data were collected over a period of two months.

5.3 FINDINGS

The findings are presented according to the respondents' demographic data, information about the Voluntary Counselling and Testing services that were provided, respondents' communication about their HIV status, information about breastfeeding practices and cultural factors, and their knowledge about the mode of transmission of HIV and infant feeding methods.

5.3.1 Respondents' demographic data

The demographic data explored in the study included age, ethnic group, religious affiliation, marital status, number of people living in the household, educational standard and tertiary qualifications, employment and family income, all factors which might alter the HIV positive women's decision to commit themselves to exclusive breastfeeding.

The United Nations General Assembly issued a Declaration of Commitment on HIV and AIDS within its Millennium Goals. The target included a 25% reduction in the percentage of HIV infected women aged 15-25 years by 2010 (Thorne & Newell 2003:447).

The ages in this study were fairly evenly distributed between 18 and 24 years; 34.8% of the respondents were older than 24 years. The oldest was 42 years (see Chapter 4, figure 4.1).

Cultural practices have an impact on the choice of infant feeding and these women are members of communities. Latham and Preble (2000:1656-1660) state that in some African communities such as Kenya, breastfeeding has fertility implications and this may affect the choice of infant feeding, the duration of practising exclusive breastfeeding and the importance of breastfeeding within the culture. According to Longmore (1959:155), the Shangaan and Zulu people took special precautions to protect the baby against evil spirits, evil-doers and wizards, as encouraged by the traditional healers. Most respondents in this study were Tswana and Tsonga speaking. Zulu and Northern Sotho were also prevalent, with the Venda and Ndebele being the least in number (refer to Chapter 4, table 4.1). Regarding religious affiliation, the Zion Christian church had the

most members at 23.9%. The Apostolic church had 15.2%, Catholic and Lutheran had 13% and 10.9% respectively (refer to Chapter 4, figure 4.2).

Illiyasu et al (2005:50-55) state that they found that educational standard, religion and occupation did not affect knowledge of breastfeeding. On the other hand, Gupta and Khanna (1999:3), who carried out a study in India, point out that formula is more expensive than breastfeeding; family income may well have an effect on the choice of infant feeding. A higher number of single women, in the study done by Muko et al (2004:136) in Cameroon, chose to breastfeed their babies as compared with married mothers. It was observed that most of the teenage single mothers preferred breastfeeding because choosing artificial feeding was a declaration of HIV positive status and that could reduce the chances of getting married (Muko et al 2004:136). This study found that 15.2% were married, 43.5% were living together with a partner, 6.5% were separated and 34.8% were single. Most couples were living together. The marital status had an effect on the economic status of the family (see Chapter 4, figure 4.3).

The majority in this study, 84.8% of the respondents, lived in an urban area. This would affect the infant feeding choice; if they lived in a rural area there might be problems of provision of clean water supply for formula feeding. In this study 8.7% had fewer than three people in the household, 19.6% had three people, and 4.3% had eight or nine people in the household. The majority of respondents had between three and five people in the household (see Chapter 4, figure 4.4).

According to the study done in Cameroon by Muko et al, women with higher income preferred artificial feeding as compared with the lower income group (Muko et al 2004:136). In this study, with regard to the highest educational standard passed, 9% had passed grade 5 and below, 6.5% had passed grade 6, 17.4% had passed grade 11, and 10.9% had passed grade 12. There was a fair distribution of the educational standard passed. Only 6% had a tertiary qualification and one had a certificate (refer to Chapter 4, table 4.4).

Helman (2007:69) points out that according to the 1984 World Fertility Survey, breastfeeding practices had declined in urban and industrialised societies, whereas rural women in the developing countries breastfed 2–6 months longer than urban women. A reverse trend is observed recently, in that there is a gradual return to

breastfeeding among mothers in the upper socio-economic classes (Helman 2007:70). Of the respondents, 71.7% were not employed. The 28.3% that were working were employed as clerks, domestic workers, salespersons and farm labourers. However, 52.2% stated the reason for not working was that they could not find a job, 8.7% did not work because they were pregnant, 10.9% had other reasons like still attending school, bringing up the baby or having no identity document (see Chapter 4, tables 4.6, 4.7).

Of the respondents, 17.4% had an income of below R1 000; 45,7% had an income of R1 000–R3 000, 30.4% had an income of R3 001–R6 000, 4.3% had R6 001–R10000, and only 2.2% had an income above R10 000 (see Chapter 4, table 4.8). The income would influence the choice of infant feeding, as formula is more expensive than exclusive breastfeeding. Spouses seem to be the main source of income, at 58.7%; 10.9% were sustained by mothers of the respondents, and 4.3% by the fathers of the respondents. Respondents who were themselves the main source of income amounted to 10.9%. Other main sources of income added up to 13% – where a brother or sister was working, both partners were the main sources of income or where nobody was employed in the family (see Chapter 4, table 4.9). More finances are required to maintain formula feeding, so income has an effect on the choice of infant feeding and maintenance thereof.

5.3.2 Voluntary Counselling and Testing (VCT)

In this section the study explored the quality of the service rendered at the VCT centre, as this can affect commitment to the chosen feeding method.

The ideal date for booking at antenatal clinic is after the pregnancy is detected to enable health workers adequate time for investigations and education of the patient (Fraser et al 2006:241). Of the respondents, 28.3% were less than 24 weeks pregnant when they first attended the antenatal clinic, 54.3% were over 24 weeks and 17.4% were not sure of the duration of pregnancy when they first attended (see Chapter 4, table 4.10).

The Department of Health recommends in the guidelines that the VCT be introduced to pregnant women at the initial visit (South Africa. Department of Health 2001:10; 2007b:17). This was the case with most of the respondents, as recommended. The expectation was that whatever was agreed upon during VCT counselling would be

emphasised throughout antenatal visits to encourage compliance. Of the respondents, 97.8% received VCT on their initial visit, and only 2.2% did not (refer to Chapter 4, table 4.11).

According to the Policy and Guidelines for Implementation of the PMTCT Programme (South Africa. Department of Health 2008:33), women who have missed testing during the initial visit will be tested on the next visit if they give consent. Of the respondents, the majority of 82.6% were tested on their initial visit and 17.4% were not. Respondents had a choice of testing on the initial or the next visit (South Africa. Department of Health 2007b:33). Of the respondents who did not test on the initial visit, 62.5% said they were not mentally ready at first, 25% said they tested on third visit at 36 weeks' gestation and 12.5% had tested positive in the previous pregnancy. Most of the respondents were not mentally ready to be tested on their initial visit (refer to Chapter 4, table 4.13).

According to the Department of Health (South Africa. Department of Health 2007b:32), the stages of HIV have to be explained to clients during the pre-testing group session and clarified during individual pre-test sessions. Most of the respondents said the stages of HIV were explained to them, but 39.1% did not get the explanation (see Chapter 4, table 4.14).

The mode of transmission of the HIV virus has to be explained during group and individualised pre-test sessions, according to the Policy and Guidelines for Implementation of the PMTCT Programme (South Africa. Department of Health 2008:32). Of the respondents, 91.3% had the transmission of HIV through breastfeeding explained to them and only 8.7% did not have the explanation (see Chapter 4, table 4.15).

According to the Department of Health (South Africa. Department of Health 2007a:32), the health worker has a responsibility to provide information on infant nutrition and the client is then assisted to choose a feeding option based on her individual situation. Of the respondents, 4.3% were influenced by their partner, 45.7% were influenced by the health worker, while 50% were not influenced as they decided on their own (see Chapter 4, figure 4.6).

The requirement for the VCT for PMTCT programme is that a client attends the group information session and then the individualised pre-test session with the counsellor, where all the information discussed in the group session is reinforced (South Africa. Department of Health 2001:10; 2008:32). The requirement is that a group information session should precede the individualised session on the initial visit (South Africa. Department of Health 2001:10).

A majority of 87% had an individual session with the counsellor; 13% did not attend the individualised session. A majority of 73.9% attended the group information session but 26.1% did not attend the group session (see Chapter 4, table 4.17). Most clients attended the group and individualised pre-test sessions as required by the Department of Health.

According to PMTCT programme guidelines (South Africa. Department of Health 2008:33), the client has a choice of getting the HIV results on the same day of testing or on the next visit. A majority of 71.7% were given the results on the same day of testing; 28.3% were given results during the next visit (see Chapter 4, table 4.18).

The partners of 82.6% of the respondents did not come for counselling and testing; 17.4% had their partners come in for testing. A majority of the partners did not come (see Chapter 4, table 4.19).

In terms of the VCT guidelines the counsellor had to explain all the feeding options to the woman to enable her to make an informed decision (South Africa. Department of Health 2001:9). Of the respondents, a majority of 84.8% had the feeding choices explained after testing, while 15.2% had no explanation (see Chapter 4, table 4.20). Of the respondents, 87% indicated that exclusive breastfeeding was explained to them, 84.8% had exclusive formula feeding explained, 26.1% answered “Yes” to mixed or complementary feeding. Other options included no feeding option explained (2.2%). The information provided to respondents focused mainly on exclusive breastfeeding and exclusive formula feeding; mixed or complementary feeding was explained to a lesser extent (see Chapter 4, figure 4.).

A minority of 4.3% respondents said their partners were included in the counselling session on feeding options. A majority of the partners (95.7%) were not included in the counselling session on feeding options (see Chapter 4, table 4.21). The Department of Health (South Africa. Department of Health 2007a:58) emphasises the importance of partner involvement in the counselling session as this support promotes compliance.

According to PMTCT guidelines, exclusive breastfeeding forms part of the information on infant feeding methods (South Africa. Department of Health 2007a:14; *Health benefits* 2003:1). Most respondents (78.3%) discussed exclusive breastfeeding during counselling; 21.7% did not discuss exclusive breastfeeding with the counsellor (see Chapter 4, table 4.22).

The requirement, according to the Department of Health, is that the benefits of exclusive breastfeeding should be highlighted, with consideration of the client's situation, in order for the client to make an informed choice (South Africa. Department of Health 2007a:53). Of the respondents, 69.6% were given information on the benefits of exclusive breastfeeding, 69.6% on conditions under which they should not exclusively breastfeed, 63% of respondents were informed on when to stop exclusive breastfeeding. Not all respondents were given information on exclusive breastfeeding (see Chapter 4, figure 4.8). Of the respondents, 82.6% said formula feeding was explained to them but 17.4% said exclusive formula feeding was not explained to them. The majority had formula feeding explained as an option.

Of the respondents, 84.8% got information on what exclusive formula feeding is, 71.7% said they were given information on the preparation of the formula, 43.5% said they were told about the danger signs for a baby on formula and 2.2% were told about the cost of the formula (see Chapter 4, figure 4.8). All the methods of infant feeding should be explained during pre-test and post-test counselling to ensure that the client makes an informed choice (South Africa. Department of Health 2007a: 53).

Baumann (1998:401) states that the qualities of a good counsellor are that he or she should be warm, trustworthy, empathetic, understanding and show respect for the clients. The counsellor must not be judgemental or have a dismissive attitude. Of the respondents, 15.2% said the health workers were polite, 80.4% said the health workers

were friendly and approachable and only 4.3% said they were hurried and impatient. “Friendly and approachable” was the general impression (see Chapter 4, table 4.24).

The Department of Health states in the PMTCT Policy and Guidelines (2008:32) that clients should be allowed to ask questions during the individual information session and health workers have to answer and clarify misunderstandings the clients might have, based on the information discussed during the pre-test group session. Of the respondents, 43.5% asked or were allowed to ask questions, while 56.5% did not ask. Most respondents did not ask questions. Of the respondents who asked questions, all said their questions were answered to their satisfaction (see Chapter 4, table 4.26).

Latham and Preble (2000:1656-1660) discuss the benefits of exclusive breastfeeding including the risk of vertical transmission of HIV-1, concluding that if it is practised correctly, lesser risks of transmission occur. According to the Department of Health PMTCT Policy and Guidelines, the client’s situation should be considered during post-test counselling to ensure a good choice of infant feeding method (2007b:37). In the study 56.5% said that breast milk is good for the baby, 10.9% said they chose exclusive breastfeeding as there was no clean running water from the tap, 19.6% said they did it to ensure adequate bonding, 30.4% said it was practised in their community. In addition, 56.5% feared the stigma attached to formula feeding by HIV positive mothers, 32.6% said they did not disclose their HIV status to relatives, 4.3% said there was inadequate formula supply at the clinic, 4.3% said they chose exclusive breastfeeding as it has no cost implications, 8.7% said they chose exclusive breastfeeding as they did not know that they were HIV positive and that the baby was crying. They had tested during the postnatal period. The belief that breast milk is good for the baby and the fear of the stigma attached to formula feeding were the two major considerations (see Chapter 4, table 4.27).

According to Keke (2005:2), some clients do not want to disclose their HIV status to their partners, as they are financially and emotionally dependent on the partners and fear the rejection that goes with disclosure of their HIV status. Du Plessis (2005:1) states that the clients feared negative responses from their partners and therefore would continue breastfeeding because the partners would question why they were not breastfeeding and that might lead to coerced disclosure of the HIV status. In this study a minority of 15.2% said they were comfortable in disclosing the HIV status.

A majority of 84.8% said they were not comfortable with exclusive breastfeeding. Of these one (2.6%) said the reason why she was uncomfortable to exclusively breastfeed was that she did not understand exclusive breastfeeding, 7.7% did not know how to put the baby to the breast, 5.1% said the breasts were painful; 84.6% feared transmission of the HIV to the baby. Most respondents were not comfortable with breastfeeding as they feared the transmission of the HIV to the baby (see Chapter 4, figure 4.10).

According to the Department of Health, as stated in the Infant and Young Child Feeding Policy (South Africa. Department of Health 2007a:14), the HIV positive clients should be given unbiased individualised counselling on infant feeding options for the client to make an informed choice. The choice should also be feasible, with adequate support to cope with family and social pressures. Most respondents, 65.2%, said their partner supported exclusive breastfeeding, while the partners of 34.8% did not (see Chapter 4 table 4.29). In the study a minority of 31.3% stated that their partner feared transmission of HIV to the baby, 12.5% said their partner thought HIV did not exist, 6.3% of the partners had disappeared after HIV disclosure, 6.3% of the respondents answered that they and their partners fought a lot, with no chance of discussion on infant feeding;18.8% did not disclose their status to their partner; for 6.3% the partner supported exclusive breastfeeding initially then changed his mind, 12.5% disappeared after the pregnancy was reported, and 25% were not involved in counselling, therefore there was no discussion of infant feeding. Most partners did not support breastfeeding for fear of transmission of the virus to the baby (see Chapter 4, table 4.30).

According to Department of Health (South Africa. Department of Health 2007a:52), before the infant attaches itself to the breast health workers should confirm the client's feeding method and assist the mother according to her choice of infant feeding method. In this study 43.5% said that the health worker visited them to ensure that exclusive breastfeeding was practised, but a slight majority of 56.5% said they did not get the postnatal visit (see Chapter 4, table 4.31). Most respondents who got a visit had one or two visits; 17.4% said they had one postnatal visit, 21.7% had two visits, 2.2% had three visits from a health worker, 2.2% had more than three visits, while a majority never had a postnatal visit by the health worker (see Chapter 4, table 4.32). Counselling of HIV positive clients on infant feeding should be done within 72 hours of delivery, according to PMTCT Guidelines (South Africa. Department of Health 2008:52). More than half of the respondents did not get a postnatal visit, which indicates inadequate care for the clients.

5.3.3 Communicating HIV status

Du Plessis (2005:1) stated that there is reluctance to disclose HIV status for fear of negative reaction from partners. Of the respondents, 37% said they were able to communicate with people about their HIV status but 63% said they were not able to do so. Most respondents were not able to communicate with people about their HIV status (see Chapter 4, table 4.33). Helman (2007:398) states that people diagnosed with HIV or AIDS are often discriminated against, become victims of prejudice and even violence; fear of social rejection thus leads to a reluctance to disclose their HIV status. Of the smaller number of respondents who communicated their HIV status, 34.3% informed the partner about their HIV status, 17.4% said they informed their mother, 19.6% informed a brother or sister, 13% informed a friend, 15.2% informed no one, 2.2% informed the children and 10.9% informed the doctor or health worker. Most respondents informed their partners (see Chapter 4, table 4.34). Muko et al (2004:136) state that in the Cameroon study some of the teenage mothers were not able to disclose their HIV positive status to their partners as they feared they might not get married if they disclosed it. Helman (2007:398) states that fear of discrimination and prejudice may lead to non-disclosure of the HIV status. Of the respondents, 6.9% said they feared rejection by the family, 17.2% said they were unable to communicate their HIV status due to the stigma attached, 62.1% said they feared humiliation and 13.8% had other reasons like not wanting to hurt relatives and parents and fear of gossip, while some were unsure of the reason. Most respondents did not communicate their HIV status as they feared humiliation (see Chapter 4, figure 4.11).

In Cambodia, traditional healers provide tea remedies during pregnancy, labour and delivery for the protection of the mother and the baby against evil (*Traditional practices in childbirth* … 2005). The belief in Cambodia is that the baby belongs to the spirit for the first three days and will only be part of the human race on the fourth day, so it is crucial for the baby to be protected during the first three days (*Traditional practices in childbirth* … 2005). Of the respondents, 13% said they consulted a traditional healer about the pregnancy and HIV status, though 87% did not consult the traditional healer. Most respondents did not consult a traditional healer. The consultation of the traditional healer might affect the practice of exclusive breastfeeding, as some herbs may need to be taken orally and this could affect the breast milk.

Helman (2007:405) states that in Botswana some traditional healers regard HIV as an indigenous illness that can be treated with traditional methods. According to Uiso, Kayombo, Mbwambo, Mgonda, Mahunnah and Moshi (2006:95-100) in a study done in Arusha, Tanzania, 61% of traditional healers claimed that they treated HIV infected patients. Only 23% of the healers mentioned more than six symptoms associated with HIV and AIDS. Knowledge of the mode of transmission of HIV from mother to child during pregnancy, delivery and breastfeeding was poor for most traditional healers. In this study, 50% of the respondents said the traditional healer informed them that HIV can be treated with herbs like other diseases, and suggested the African Potato, 16.6% responded that the healer said that the placenta had not been removed after the previous baby, hence this HIV illness, and 33.3% said the healer said the patient was bewitched. The most common information from the healer was that HIV could be treated like other diseases using herbs (see Chapter 4, table 4.36).

5.3.4 Breastfeeding practice

Burrowes (2004:2) recommends exclusive breastfeeding for 3 months and states that the HIV rate increases by 68% if breastfeeding is done for more than 6 months. The Department of Health (South Africa. Department of Health 2007a:14) recommends that HIV positive clients breastfeed exclusively for 6 months or practise replacement feeding. Kramer and Kakuma (2002:1) state that exclusive breastfeeding for 6 months reduces gastrointestinal infection, does not impair the baby's growth and helps the mother to lose weight (as compared with breastfeeding of 3 to 4 months' duration).

In the study, 10.9% practised exclusive breastfeeding for a period of 1 week, 6.5% for 2 weeks, 15.2% breastfed exclusively for 3 weeks, 13% for 4 weeks, 23.9% respondents practised exclusive breastfeeding for 6 weeks and 30.4% breastfed for "other" varying periods from one or two days up to 8 weeks. The respondents therefore did not practise exclusive breastfeeding according to the recommended time frames stated during counselling sessions. Most respondents breastfed exclusively for 6 weeks and changed when they brought the babies for their postnatal check-up (see Chapter 4, table 4.37).

The Department of Health (South Africa. Department of Health 2007a:9) recommends that HIV positive clients who cannot do replacement infant feeding should practise exclusive breastfeeding. Some clients practised mixed feeding, which does not have

good results as regards HIV. At the post-natal follow-up, 13% were breastfeeding exclusively, 10.9% practised mixed feeding, 65.2% were not breastfeeding any more and 10.9% used other kinds of mixed feeding, giving porridge and breast milk, or breast milk and fruit juice. Most respondents were no longer breastfeeding when they came for the postnatal follow-up (see Chapter 4, table 4.38).

Butler et al (2004:1) did a study in New Zealand in 2000. The results of the cohort study were that factors associated with not continuing with exclusive breastfeeding included smoking, employment prior to pregnancy, being in current employment, high parity, dummy use, infant not discharged at the same time as the mother, infant not sharing the same room as the parent(s) at night, regular childcare, and having a home visit for the infant from a traditional healer.

Less than half the respondents in this study answered the question on breastfeeding practices: 19.6% practised exclusive breastfeeding as they felt it was the correct way of preventing HIV transmission to the baby, 8.7% stopped breastfeeding because they went back to work, 4.3% stopped due to family pressure, 8.7% stopped due to the stigma attached to exclusive breastfeeding and being too ill to breastfeed, 10.9% felt that the breast milk was not enough for the baby and 10.9% gave other reasons, like looking for work (see Chapter 4, table 4.39).

Of the respondents, only 8.7% were admitted for an illness to a hospital or clinic while still breastfeeding. Most respondents (91.3%) were not admitted to a clinic or hospital and most were not ill post delivery. Maternal health might affect the breastfeeding pattern. Chisenga et al (2005:266-275) state that a shorter duration of exclusive breastfeeding was associated with poor maternal and infant health. Of the 7 respondents who were ill after the birth, 4.3% complained of coughing and 10.9% had other complaints like having severe vaginal infections and having had a Caesarean section (see Chapter 4, table 4.42). Hwang et al (2006:74-80) state that some mothers who had a Caesarean section were less likely to keep up the breastfeeding, including clients who delivered babies with a birth weight of less than 2.5 kg.

Some respondents were admitted to hospital after the birth. 15.2% continued to breastfeed their babies then stopped and 84.8% were not admitted (see Chapter 4, table 4.43). Of the respondents who were admitted, one (14.3%) was too ill to

breastfeed, one (14.3%) was too tired to breastfeed and 42.9% breastfed during admission and were advised by staff to stop. Of the 7 respondents who practised breastfeeding during admission, most (57.1%) stated that they changed to formula feeding, 14.3% had not started to breastfeed during admission but started at home, 14.3% gave formula and breast and 14.3% gave the breast at home (see Chapter 4, table 4.45).

Miller et al (2002:1247) state that if the client has mastitis breastfeeding is not recommended. Van Dyk (2005:390) states that if the CD4 count is below 200 cells/mm^3 then the viral load is high and the patient is prone to opportunistic infections and general malaise. The general malaise might have led to admission of the mother, with reluctance to breastfeed. Geoffrey and Weinberg (2000:201) state that if the maternal viral load is high then the rate of transmission is high, therefore breastfeeding is not recommended. Of the respondents, 34.8% said they had breast or breastfeeding problems, though 65.2% had none (see Chapter 4, table 4.46). The question was designed to determine if the respondent had problems with breastfeeding during admission that might have altered her commitment to exclusive breast feeding. In the study the problems were: 28.3% experienced painful breasts.13% had swollen and hot breasts, 6.5% had cracked nipples and 15.2% said the breast milk was not enough. Painful breasts were the most common complaint (Chapter 4, figure 4.12).

Helman (2007:70) states that there have been changes in the breastfeeding patterns in sub-Saharan Africa, where HIV positive women have been advised not to breastfeed as half of mother-to-child transmissions of HIV occur during breastfeeding. Most respondents (67.4%) said they had noticed a change within the community, though 32.6% said they did not notice any changes in the community regarding breastfeeding practices (see Chapter 4, table 4.47).The breastfeeding practices within society affect the feeding patterns of the woman as a member of society. Of the respondents, 45.7% noticed a reluctance to breastfeed, 30.4% said breastfeeding is done for a shorter time, 2.2% said exclusive breastfeeding is done, 4.3% said mixed feeding is practised, 13% said formula feeding is practised. The most common changes seem to be reluctance to breastfeed and that mothers are breastfeeding for short time only (see Chapter 4 figure 4.13). As mentioned earlier, Helman (2007:69) maintains that according to the 1984 World Fertility Survey breastfeeding practices have declined in urban and industrialised societies, whereas rural women in the developing countries breastfed 2-6 months longer

than urban women. A reverse trend has been observed recently in that there is a gradual return to breastfeeding among mothers in the upper socio-economic classes (Helman 2007:70).

Longmore (1959:155-243) stated that herbal drinks were given to the baby for protection against evil spirits and breast milk was said to be not enough for the baby. In this study most mothers (60.9%) gave the babies herbal drinks while 39.1% (n=18) did not (see Chapter 4 table 4.48).The herbal drinks given to the baby would lessen commitment to exclusive breastfeeding. The respondents' mothers encouraged most respondents (41.3%) to give herbal drinks, 8.7% were encouraged by friends, 4.4% by a traditional healer or neighbour and 6.5% by the partner. The question was not applicable to 39.1% of the respondents as they answered No in the previous question (see Chapter 4, table 4.49).

As mentioned earlier, in Cambodia (*Traditional practices* … 2005) babies were given herbal tea from traditional healers to protect the mother and the child against evil spirits especially in the first three days. In this study the reasons stated for giving herbal drinks to the baby were that herbs were for healing of the baby's fontanelle (4.4%), 19.6% said it was to prevent restlessness in the baby and help the baby to sleep, 32.6% said it was to protect the baby against evil spirits, 17.4% said it helped with abdominal cramps and 8.7% said it helped with healing of the umbilicus, 4.4% said it cleared the greenish stools after birth and 15.2% said it made the baby strong. The most common reasons were to protect baby against evil spirits and prevent restlessness (see Chapter 4 table 4.50). According to Longmore (1959:243), there was an African belief that breast milk was not enough for the baby and therefore additional liquid was given to the baby and to protect the baby against evil spirits as stated in item 60 (*Traditional practices* … 2005).

Cultural practices can affect breastfeeding. Very few respondents (13%) believe their culture allows sexual relations with partner during breastfeeding. Most said it was not culturally acceptable and 87% said No (see table 4.51). Sexual relations were not culturally acceptable as the baby might become ill by having a bulging fontanelle and the treatment was to apply semen on the upper lip and the fontanelle of the baby (*An interactive experience* 2004:1). Of the respondents, 34.8% did not know the reason, 41.3% believed that the baby would be ill, 6.52% said the baby had to be six months of

age before they could indulge in sexual relations, 4.4% said the umbilical cord would take longer to dry up and sexual relations were allowed only with the husband, while 2.2% said the baby would have contaminated milk (see Chapter 4, table 4.52). The most common reason stated was that baby would be ill. *An interactive experience* (2004:1-3) recounts that the baby might develop a bulging fontanelle as it would have "dirty" milk if the parents indulged in sex.

It was culturally accepted that babies be breastfed for 3-4 years (Longmore 1959:82; *An interactive experience* 2004:1)). If the mother is working the expressed breast milk cannot be placed in the fridge near food according to cultural practice (*An interactive experience* 2004:1). In this case working mothers will find it difficult to express breast milk for infant feeding and keep the milk safe for giving to the baby. The majority, 80.4%, said breast milk was good for the baby as the baby would be healthy and strong, Fewer respondents (8.7% and 2.2%) said it was not allowed to breastfeed if you fell pregnant and that breastfeeding was allowed only for three years (see Chapter 4, table 4.53).

5.3.5 Infant health

Hwang et al (2006:74-80) state that mothers of preterm babies with a weight below 2.5 kg are less likely to adhere to breastfeeding. Most (67.4%) of the babies weighed 2.5 kg and above at birth, 10.9% weighed below 2.5 kg and 21.7% of the respondents did not know the babies' weight at birth (see Chapter 4, figure 4.14).

The majority (84.8%) of mothers said they placed the baby to the breast two hours or more after birth. Only 15.2% placed the baby to the breast immediately after birth (see table 4.54). According to Fraser et al (2006:740), early feeding after birth contributes to the success of breastfeeding. The Department of Health states in the PMTCT Policy and Guidelines (South Africa. Department of Health 2007b:47) that within an hour of delivery all infants born of HIV positive mothers should start feeding where skin-to-skin contact is maintained, if they chose to do exclusive breastfeeding. In the case of most of the respondents, this practice was not followed immediately after birth or within an hour of delivery as recommended by the Department of Health according to the findings of the study.

Chisenga et al (2005:266-275) found that a shorter duration of exclusive breastfeeding was associated with poor maternal and infant health. In this study, a majority of 71.7% of the respondents did not have problems with the baby taking to the breast, though 28.3% did experience problems (see table 4.55). Fraser et al (2006:749) point out that feeding difficulties may be due a blocked nose, tongue tie, prematurity, illness or surgery on the part of the baby. Of the respondents who had problems, most (26.1%) said the baby was unable to suck from the breast. A few (4.4%) responded that the baby slept too much or that the baby had difficulty in breathing (see Chapter 4, table 4.56).

According to the Department of Health PMTCT Policy and Guidelines (South Africa. Department of Health 2007b:52), health workers are expected to offer ongoing support to the client during the postnatal period on infant feeding. Riva, Banderalli, Agostoni, Silano Radaelli and Giovannini (2007:411-415), after a study done in Italy, concluded that for breastfeeding to be successful, mothers need support with breastfeeding, especially those with lower social backgrounds and lower education. In this study a small majority of 56.5% stated that the nurse helped them, 34.8% had help from a neighbour or from no one, while 4.3% stated that their mothers helped them (see Chapter 4, table 4.57).

Chisenga et al (2005:266-275) pointed out that a shorter duration of exclusive breastfeeding was associated with poor maternal and infant health, and this might have been the reason for lack of commitment to exclusive breastfeeding. Most babies (84.8%) were not admitted to hospital. Only 15.2% babies were admitted (refer Chapter 4, table 4.58).

Fraser et al (2006:750) state that babies recover quickly following illness but if feeding has been interrupted the mother requires skilled help to initiate or re-establish feeding. Of the respondents whose babies were admitted, 10.9% said they changed from exclusive breastfeeding when the baby was admitted (see Chapter 4, table 4.59).

The question of babies being admitted was not applicable to 87% respondents, among the rest 4.3% said they stopped exclusive breastfeeding after the baby was admitted, 2.2% gave other liquids and 6.5% gave other mixtures like formula and breast milk.

Various changes were made when the babies were admitted (see Chapter 4, table 4.60).

All the respondents except two had stopped exclusive breastfeeding. In answer to a question of how long they had breastfed before stopping, 26.1% said that they stopped exclusive breastfeeding within two weeks after delivery. Most mothers (67.4%) chose the “other” duration, varying from 3 weeks after delivery to one month after delivery, or 10 weeks (see Chapter 4, table 4.61). The recommendation is that HIV positive women who choose exclusive breastfeeding do so for 6 months (South Africa. Department of Health 2007a:14; Coutsoudis 1999:354). The respondents stopped exclusive breastfeeding long before the recommended duration. The maximum period was 10 weeks. Most respondents (82.6%) had completely stopped breastfeeding though 17.4% did not stop completely (see Chapter 4 table 4.62). According to Coovadia, Rollins, Bland, Little, Coutsoudis, Bennish and Newell (2007:1107-1116), mixed feeding is associated with increased transmission rate of HIV from mother to baby.

Butler et al (2004:1) found that one of the reasons why mothers stopped exclusive breastfeeding was that the mother was not in the same room as the baby at night. Maternal and infant health also contributed to the success of exclusive breastfeeding. In this study, fear of transmitting the HIV to the baby seemed to be the most common reason for stopping breastfeeding (76.1%), while 21.7% of the respondents were advised by the health worker to stop. Other reasons were that the infant was too sick to be breastfed (2.2%), 13% of mothers were advised by the husband to stop, 15.2% had problems with the breasts, 4.3% said they were too sick to breastfeed and 15.2% had other reasons like having to look for work or going back to work and not having enough milk (refer Chapter 4, figure 4.15).

5.3.6 Knowledge of HIV and infant feeding

The explanation of Human Immunodeficiency Virus (HIV) is that the virus targets the T-helper cells and CD4 lymphocytes of the immune system, suppressing the body’s defence mechanisms and resulting in increased risk of opportunistic diseases (Fraser et al 2006:364; De Kock & Van der Walt 2004:19.2). In response to questions, most respondents knew what HIV was by definition. Most respondents (82.6%) stated that it is a virus that attacks the immune system though 8.7% said they did not know (see

Chapter 4, table 4.63). Of the respondents, 30.4% stated that HIV is the same as AIDS, 52.2% (n=24) said it was an advanced stage of HIV and 10.9% did not know (see Chapter 4, figure 4.16). Nzimande (2005:36) defines AIDS as an acronym for acquired immune deficiency syndrome, which represents the terminal phase of the HIV infection. More than half of the respondents answered correctly. The Department of Health requires that the pathophysiology of HIV be explained during VCT, as stated previously.

The mode of transmission of HIV from person to person is outlined in van Dyk (2005:30). Most respondents answered correctly. All the respondents said transmission of HIV was through contact with blood and sex; 97.8% said that transmission could occur through breastfeeding, 65.2% agreed that if the mother had sores on the breast transmission could occur and 73.9% said sharing of razor blades could lead to HIV transmission. Options of kissing, saliva and sharing of utensils as methods of HIV transmission were chosen less frequently (see Chapter 4, figure 4.17).

Coovadia et al (2007:1107-1116) declare that mixed feeding is associated with a higher rate of mother-to-child transmission of HIV. A majority of 89.1% of the respondents stated that mother-to-child transmission of HIV can occur during mixed feeding and through exclusive breastfeeding (see Chapter 4, table 4.64). Knowledge of the respondents regarding the effects of mixed feeding was adequate, as this would affect their commitment to exclusive breastfeeding.

Muko et al (2004:133), Miller et al (2002:1247), McKerrow (2001:16) and Coutsoudis (2005:11-12) state that HIV positive clients should not breastfeed when the mother has mastitis, cracked nipples and when the baby has oral thrush because the virus can enter the infant's system through a break in the mucous membrane. Most respondents answered correctly. Most respondents (95.7%) said no breastfeeding should take place when the mother has an abscess on the breast; 91.3% said not when breasts are swollen and painful, 89.1% said no breastfeeding when breasts have a lump which secretes blood, 87% said no breastfeeding should be done when there were cracked nipples and 45.7% said a mother should not breastfeed when she did not feel well (see Chapter 4, table 4.65).

Of the respondents, 95.7% stated that HIV gains entry to the child during breastfeeding when the baby has sores in the mouth, 84.4% said when nipples are cracked. These

were the most popular responses; 56.5% said that HIV gains entry to the baby when the breasts have an abscess. The lowest response was by the 23.9% who said this occurred when baby had diarrhoea (see Chapter 4, table 4.66).

According to the Department of Health Infant and Young Child Feeding Policy (South Africa. Department of Health 2007a:14), exclusive breastfeeding should be done for the first 6 months for HIV positive clients unless replacement feeding is acceptable, feasible, affordable, sustainable and safe. Most respondents (89.1%) said “Less than 4 months” in answer to the question on desirable duration of exclusive breastfeeding and only 10.9% said 4 months (see Chapter 4, table 4.67).

Most respondents (93.5%) said exclusive breastfeeding means giving the child only breast milk, and only 2.2% said it would still be exclusive breastfeeding if other food were added (see table 4.68). According to McKerrow (2001:18), exclusive breastfeeding is when the baby ingests nothing at all other than breast milk. Most respondents knew the meaning of exclusive breastfeeding which meant they understood what they had committed themselves to.

The Department of Health (South Africa. Department of Health 2007a:13) states in its Infant and Young Child Feeding Policy that scientific evidence demonstrates that breastfeeding is in the best interest of a majority of infants. Infant feeding is discussed during the pre- and post-test counselling as a requirement by the Department of Health (South Africa. Department of Health 2007a:50). All the respondents answered that breast milk was good for the baby (see Chapter 4, table 4.69). When asked why they would breastfeed, a majority of 95.7% said breast milk is convenient without preparation, 69.6% said bonding with the baby occurs, 58.7% said breast milk is at the right temperature, 28.3% stated that the baby is protected by antibodies in the milk, 4.3% stated that they did not have clean water from the tap for formula milk, 32.6% said they breastfed as family members would ask questions if they used formula, 2.2% said breastfeeding was practised in the community, 21.7% said it had no cost implications, 6.5% said it was recommended by their mother and 6.5% had “other” reasons, including that milk can be given at any time and it is safe (see Chapter 4, table 4.70). Convenience seems to be the most common reason, with the welfare of the baby the second consideration.

According to the World Alliance for Breastfeeding Action Activity Sheet 7 (WABA 2008), advantages of breastfeeding include provision of nutrients for physical and mental development, provision of immunity, reduction of allergies, saving of financial resources and reduced fertility.

5.4 CONCLUSIONS

The following conclusions were drawn from the data:

5.4.1 Voluntary Counselling and Testing

More than half of the total respondents booked at the antenatal clinic after 24 weeks of pregnancy. This meant that adequate follow-up and support by the health workers could not be done due to late booking at the antenatal clinic.

Half of the respondents were not influenced on the choice of the infant feeding method during VCT. The Department of Health required that the respondents be assisted and supported in their choice of infant feeding method.

The responses indicated reluctance on the part of partners to come for counselling and testing for HIV. The partners were not even included in the choice of infant feeding method. This meant that the infant feeding method chosen by respondents was inadequately supported by their partner. Mutual disclosure of the HIV status was not done and this compromised the family support required to make PMTCT services successful.

The respondents appreciated the attitudes of the counsellors in describing them as “friendly and approachable”. This meant that the attitudes were ideal as required by the Department of Health. Negative attitudes would have led to lack of commitment to exclusive breastfeeding.

According to the responses, postnatal follow-up and support for infant feeding was not adequately done by the health workers. Some respondents received only one visit by the health worker. Inadequate support by health workers regarding infant feeding could have led to lack of commitment to exclusive breastfeeding.

5.4.2 Communicating HIV status

Most respondents were reluctant to disclose their HIV status for fear of the stigma attached to the disease. Most of those who communicated their HIV status informed their partners. However, the lack of communication of their HIV status compromised the family support that is necessary to ensure commitment to the infant feeding method chosen.

5.4.3 Breastfeeding practices

The use of herbs from the traditional healers might have led to some respondents not being committed to exclusive breastfeeding. The fact that traditional healers stated that HIV could be treated like other diseases might have affected their commitment to safe practices and compromised the health of some respondents, leading to breast problems (see Chapter 4, table 4.46) and lack of commitment to exclusive breastfeeding. The herbs given to the babies might have disturbed the exclusive breastfeeding.

Most respondents did not have the problem of the babies getting ill. The risks associated with exclusive breastfeeding and HIV were understood by the respondents. However, some lack of support regarding the feeding choice by health workers might have lessened their commitment to exclusive breastfeeding.

It is an irony that the respondents understood the definition, advantages and recommended duration of exclusive breastfeeding but did not practise it as discussed during VCT.

5.4.4 Knowledge of HIV and infant feeding

The respondents' knowledge of HIV, AIDS and mode of spread of the disease was adequate. The question was asked to determine whether respondents understood the health education given during VCT, and it appeared that this was the case.

According to the respondents, exclusive breastfeeding and exclusive formula feeding were emphasised during VCT. Other feeding methods were not fully discussed during VCT counselling sessions. Most respondents stated, however, that they had altered

their commitment to exclusive breastfeeding and changed to other feeding methods, their main reason being fear of the transmission of the HIV to the baby through the breastfeeding. The dangers of mixed feeding were ignored.

5.5 LIMITATIONS OF THE STUDY

The study was limited to the Dr George Mukhari Hospital Obstetrics and Paediatrics Out-Patients Department, as the respondents brought the babies for PCR.

- Due to the limited scope of this study, a sample of 46 respondents was used.
- The duration of some interviews was long: 1 hour 45 minutes. The duration was long as some clients became emotional and tearful and needed to verbalise their concerns. The respondents wept and needed time to recover emotionally before the session could continue. The respondents stated that they had never discussed their HIV status with anybody before and this was only the second time they had talked about it after being given the results of being HIV positive at the antenatal clinic during VCT. The researcher had to provide emotional support and provide answers to the questions asked regarding their fears and the impact of the disease on the respondents' lives.
- As the study continued, more provision was made for formula feeding by the South African Government, leading to a sudden reduction of clients who chose exclusive breastfeeding for infant feeding, hence the limited number of respondents.
- It was not easy to maintain confidentiality in the screening of respondents who met the inclusion criteria. The postnatal book was used to identify respondents who had delivered in hospital, and some who attended VCT were referred to the hospital by the peripheral clinics to have the babies' blood taken 6 weeks post delivery for the Polymerase Chain Reaction Test (PCR) to determine if the babies were infected with the HIV. Almost all clients that were at the clinic on the Fridays had come for PCR, but the researcher had to screen for those that had chosen to exclusively breastfeed but were not committed to the feeding method.
- Some respondents were reluctant to sign the consent form for participating in the study for fear of being identified, although the respondents were assured of confidentiality.

Errata and omissions:

- Two questions were numbered 46 and 47 (Sections C and D). Section C was numbered 46 and 47 and Section D was numbered 46a and 47a.
- Very few clients reported being ill after delivery, therefore questions 50-54 were not widely answered.
- In question 4 the term “single” was omitted in “marital status of the respondents” as a result of sensitivity concerns after the pre-test.

5.6 RECOMMENDATIONS

Based on the findings, the researcher makes the following recommendations for improving the maintenance of exclusive breastfeeding of HIV positive women.

5.6.1 Hospital management

To improve HIV positive women’s commitment, the hospital management should do the following:

- Ensure that the PMTCT services are in place and that adequate manpower is provided to render the services as outlined by the Department of Health. The perception from the findings was that the HIV positive clients who had attended VCT did not get adequate emotional and social support regarding this disease from the health workers. The cause might be due to inadequate number of manpower allocated in these services. The hospital management may allocate more manpower for adequate service to be provided. Constant periodic inspections need to be done by the hospital managers to evaluate the service. Retrospective patient audits can be done to determine if patients were satisfied with the emotional support given by the health workers. Management may make an arrangement with the social services to make a follow-up of partners of the HIV positive clients to come for counselling. This arrangement seems to be successful in the management of sexually transmitted infections where letters are written to partners to come for treatment.
- Put in place counsellors after the patient has delivered to support the client to exclusively breastfeed.

5.6.2 Nursing education

Nursing education should do the following:

- With regard to nursing education, the nursing curriculum should continously be updated on PMTCT so that new graduates will be kept abreast of the new development on PMTCT issues.
- The nursing educators need to emphasize the importance of addressing the prevalent HIV in the curricula as recommended by the Department of Health. Areas of concern are the health education that is done during group and individualised pre-test sessions, the post test counselling that is done during VCT and the emotional support that must be given to patients with each antenatal visit until the woman delivers. Counselling has to be included in the curricula for training of student midwives and not be left to the health workers who are trained in PMTCT course.

5.6.3 Midwifery practice

To improve midwifery/nursing practice the recommendations are:

- Formula milk issuing should be done in consulting rooms or the counsellor's room to maintain privacy and confidentiality, prevent unintentional disclosure of individuals' HIV status and avoid stigmatisation and discrimination.
- Midwifery practice has to be improved by having in-service education for the midwives in the antenatal, labour and postpartum wards to be updated on the latest management of patients with HIV and have chosen a specific infant feeding method. The findings indicated that mothers who chose exclusive breastfeeding had more than 2 hours before they could put the baby on the breast. The recommendations from the Department of Health was that the midwife has to ensure the infant feeding method chosen then support the mother in putting the baby on the breast if exclusive breastfeeding was chosen. Counselling skills of the midwives have to be improved as the findings of the study indicated a limitation in terms of emotional support given to patients.

- Midwives should offer postnatal services to patients who find it difficult to exclusively breastfeed – this could be done by establishing support groups in the community they serve.
- The adequacy of counselling on infant feeding methods should be investigated and reinforced by service providers/midwives attending to women in the antenatal clinic, postnatal ward and postnatal clinic.
- Health care providers should be trained on PMTCT in order to offer continuous counseling, emotional and psychological support to pregnant women in the antenatal clinics who choose formula milk feeding. This can be done through in-service training, workshops or seminars.
- There is a need for adequate follow-up of HIV positive women immediately after delivery to ensure that the women adhere to the infant feeding method chosen, as some did not adhere to the method longer than day one after delivery.
- Patient support should be intensified, as some domestic problems had arisen and the respondents stated that they needed somebody to discuss the disease with. The perception was that post-test counselling and support was not adequate for the clients. The post-test counselling has to be intensified to provide for emotional support of the patients and maximise commitment to exclusive breastfeeding as the method of choice.

5.6.4 Health education

To improve commitment to exclusive breastfeeding, health care professionals should focus on health education by considering on the following:

- Health education has to be emphasized because the findings indicate that the partners of HIV positive women were not actively involved in the post testing counselling and on the infant feeding education. VCT principles state that for the PMTCT service to be successful family support has intense to lessen the stigma associated with HIV disease.
- During health education sessions, health care professionals should encourage women attending antenatal clinics to bring their spouses/partners of significant others during the initial antenatal clinic visit when pre-test counselling is done.

- During health education sessions all HIV positive pregnant women should be counselled on infant feeding methods and be supported by health care professional on their choice to ensure adherence to the chosen method.
- Furthermore, health education sessions could be held in the community on HIV and PMTCT in order to reduce stigmatization and discrimination. This can be done through community mobilization groups that should continue to encourage individuals to test.
- All efforts should be made to lessen the stigma associated with HIV to provide for more partner and family support and make PMTCT a success. This can be done through community education and family involvement if possible.

5.7 RECOMMENDATIONS FOR FURTHER RESEARCH

The researcher recommends that further research be conducted on the following areas:

- Assessment of pregnant women's knowledge of HIV transmission through infant feeding practices in other parts of the country to improve the generalisability of the findings.
- A qualitative study to determine the accuracy, and time spent on counselling and support of PMTCT during antenatal clinic visits by both trained and non-trained PMTCT service providers to establish the need to train health care professionals in PMTCT.
- Determine the support and counselling provided for HIV positive clients during the postnatal period to ensure commitment to infant feeding methods.
- Investigate the dilemma and the fears that the HIV positive clients who chose to exclusively breastfeed have regarding infant feeding.

5.8 CONCLUSION

Effective community education on HIV and AIDS should be carried out to ensure acceptance and support of patients suffering from the disease. The stigma associated with HIV led to lack of commitment of the HIV positive mothers in this study to a feeding method which has been proved to provide protection from the disease for the babies and strengthen their immunity. Inappropriate infant feeding methods (such as mixed feeding) increase the chances of mother-to-child transmission of the HIV. The

establishment of supportive and vibrant VCT services might give HIV positive mothers the emotional stability, confidence and commitment to adhere to infant feeding methods agreed upon with the counsellor during pre-testing and post-test sessions and lead to the success of PMTCT provision. Staff education on the importance of postnatal support and facilitation of family support will help in the reduction of mother-to-child transmission of HIV through judicious breastfeeding.

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12th October 2007

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The Registrar
Postgraduate Student Affairs
PO Box 392
UNISA

Sir/Madam

SUBMISSION OF THE MA CUR DISSERTATION

I hereby request to submit my MA CUR dissertation copies for examination by the 30th November 2007 after discussion with my supervisors.

Hoping my request shall be considered.

Yours faithfully

MCJ MADISHA

UNIVERSITY OF SOUTH AFRICA
Health Studies Research & Ethics Committee
(HSREC)
Faculty of Human Sciences
CLEARANCE CERTIFICATE

Date of meeting: 10 June 2005 Project No: 576-256-1

Project Title: The Factors which influence HIV/AIDS Postnatal-clients' decision not to comply with exclusive breastfeeding

Researcher: Ms MCJ Madisha

Supervisor/Promoter: Mrs JE Tjallinks

Joint Supervisor/Joint Promoter: Prof AGW Nolte (Univ of Johannesburg)

Department: Health Studies

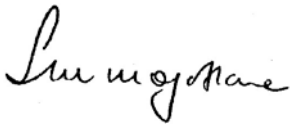
Degree: MA Health Studies

DECISION OF COMMITTEE

Approved [√] **Conditionally Approved** [ ]

Date:

Prof TR Mavundla
RESEARCH COORDINATOR



Prof SM Mogotlane
ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

ANNEXURE A

559 Block DD
Soshanguve
0152

14 April 2007

The Director
Dr George Mukhari Hospital
PO Box x450
Ga-Rankuwa

Dear Sir/Madam

REQUEST TO CONDUCT RESEARCH IN THE HOSPITAL

This letter serves to request for your permission to conduct research into the factors which influence HIV and AIDS postnatal clients' decision not to comply with exclusive breastfeeding.

I am presently registered with the University of South Africa and pursuing a Master's degree in Health Studies with specialisation in Advanced Midwifery by distance learning. This research is done to fulfill the requirement of the degree.

The HIV positive women who were on the Prevention of Mother to Child Transmission program at Dr George Mukhari Hospital, are para1 gravida 1, are and had opted for exclusive breastfeeding but did not comply will receive a questionnaire that is to be completed by them.

The researcher assures the management that ethical issues shall by all means be adhered to through the execution of the research.

I hope that my request shall meet your favorable consideration.

Yours faithfully

Ms MCJ Madisha
NURSING OFFICER

ANNEXURE C

A G R E E M E N T

I, ... on this ..... day of ..... 2007 hereby consent to

- complete the questionnaire developed by Ms Madisha on the factors which influence HIV and AIDS postnatal clients' decision not to comply with exclusive breastfeeding.

- the use of data derived from these structured interview by the researcher in the research report as she deems appropriate

I also understand that:

- I am free to terminate my involvement or to recall my consent to participate in this research at any time I feel like it

- information given up to the point of my termination of participation could, however, still be used by the researcher

- confidentiality will be maintained by the researcher and that the identity will not be linked to information

- no reimbursement will be made by the researcher for information given or participation in this project

- I may refrain from answering questions should I feel these are an invasion of my privacy

- by signing this agreement I undertake to give honest answers to reasonable questions and not to mislead the researcher

- I will be given the original copy of this agreement on signing it

I hereby acknowledge that the researcher has

- discussed with me in detail the purpose of this research project

- informed me about the contents of this agreement

- pointed out the implication of signing this agreement

In co-signing this agreement, the researcher has undertaken to

- maintain confidentiality and privacy regarding the participant's identity and information given by the participant
- arrange in advance a suitable time and place for the completion of the questionnaire to take place
- safeguard the duplicate of this agreement

PARTICIPANT: ..... **RESEARCHER: ……**

DATE: ..... **DATE: .....**

ANNEXURE C

559 Block DD
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18TH August 2006

Dear Participant

The aim of the study is to explore the factors which influence HIV and AIDS postnatal clients' decision not to comply with exclusive breastfeeding.

The results of the study may assist nurses to increase exclusive breastfeeding practices of HIV positive clients, give an accurate portrayal of the reasons of breastfeeding of these clients and their responses to the reasons of non-compliance to exclusive breastfeed.

I would appreciate it if you could take part in my research project and to be a participant. The data will be gathered from you by means of a questionnaire.

Thank you for your willingness to be a participant.

Yours faithfully

Ms MCJ Madisha
RESEARCHER