

THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF POST BASIC NURSING

**KNOWLEDGE AND PRACTICES OF HIV POSITIVE
MOTHERS ON BREASTFEEDING AND INFANT
FEEDING OPTIONS IN NDOLA DISTRICT (NEW MASALA, LUBUTO,
KABUSHI, BWAFWANO AND KAWAMA HEALTH CENTERS).**

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
BFHI	Baby Friendly Hospital Initiative
CBOH	Central Board of Health
CSO	Central Statistics Office
DHMT	District Health Management Team
EBF	Exclusive Breastfeeding
ERF	Exclusive Replacement Feeding
HIV	Human Immuno- deficiency Virus
IEC	Information, Education and Communication
MTCT	Mother to Child Transmission of HIV
NAC	National AIDS Council
PMTCT	Prevention of Mother to Child Transmission of HIV
PHC	Primary Health Care
UN	United Nation
UNAIDS	United Nations Children's Emergency Funds
VCT	Voluntary Counseling and Testing
WHO	World Health Organization
ZDHS	Zambia Demographic Health Survey

DECLARATION

I, hereby declare that the work presented in this study for the Bachelor of Science Degree in Nursing has not been presented either wholly or in part, for any other Degree and is not being currently submitted for any other Degree.

Signed:


(Candidate)

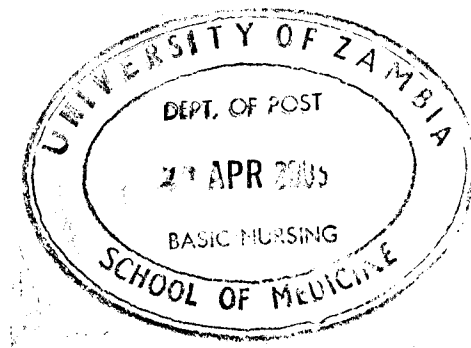
Date: 6/4/7

Approved by:



(Supervisor)

Date: 6th April 2007



STATEMENT

I, hereby certify that this study is entirely the result of my own independent investigations. The various sources to which I am indebted are clearly indicated in the text and references.

Signed.....*De*.....

Date.....*6/7/7*.....



DEDICATION

This research is dedicated to my late elder sister Mrs. Joyce Mupatwa Kunda who always wanted to see me obtain a degree and from her goodwill, I have always worked hard and live to imitate her.

ABSTRACT

This study was aimed at determining the knowledge and practices of HIV infected and breastfeeding mothers on infant feeding options in the following health centers; Masala. Kabushi. Lubuto, Bwafwano and Kawama in Ndola district. The research was necessitated by the fact that despite nurses and midwives counseling mothers on infant feeding and HIV, 95% of them opted to breastfeed despite knowing their HIV status.

Literature review revealed that studies have been done in various countries in Africa where effective infant feeding has been proven to help in PMTCT. Nationally, studies indicate that the PMTCT program has been on-going but no study has been done to find out what could be the most appropriate infant feeding option.

In this study, a cross sectional study design was used. A pilot study was carried out at Chipulukusu clinic and the actual study was done in the health centers mentioned above, where PMTCT program was actively being implemented.

The research participants were chosen using systematic sampling method and the sample size consisted of 50 postnatal mothers who were HIV positive and had come to the health center for the first (1st) postnatal visit. Data collection was done using a semi- structured questionnaire.

The data was analyzed manually using a data master sheet, frequency tables, pie charts and cross tabulations which were used to determine special relationships between variables.

The study revealed that 94% of the respondents had heard about infant feeding and HIV. It also revealed that 100% of the widows and those separated from their

Spouses had high level of knowledge as well as practicing good and safe infant feeding. Despite majority of the respondents having adequate

knowledge on infant feeding, the study revealed that 53% had been practicing mixed feeding. The study revealed a relationship between knowledge and practices. The respondents with high level of knowledge had good and safe practices of infant feeding. The study also revealed that majority of the respondents had not been counseled on the choice of infant feeding option.

In view of the above findings, the following recommendations have been made;

- Ministry of health to ensure formulated policies concerning safe infant feeding and HIV guidelines are provided to health providers.
- Ndola district health management to ensure that health providers receive adequate training to be able to understand and explain complex information about the risks of infant feeding both to the infant and the mother. This will help the mother overcome any difficulties she may be having with her feeding choice and also to ensure that the method chosen is practiced safely and effectively to minimize MTCT through breastfeeding.
- Research should be done to determine the best and appropriate way of infant feeding method of choice.

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CHAPTER ONE

1.0 INTRODUCTION

The World Health Organization and United Nations Programme on AIDS (WHO/UNAIDS) reported that in December 2001, a total of 40 million people around the world were living with HIV /AIDS. Of these 37.1 million were adults (18.5 million women) and three million children below 15 years of age.

HIVAIDS for the past two decades has continued to spread across all continents killing millions of adults in their prime, disrupting and depriving families, turning millions of children into orphans, weakening the workforce, and threatening the social and economic fabric of communities (NAC HIV/AIDS 2002-2005).

In the Sub-Saharan Africa, 28.5 million people were living with HIV/AIDS. The biggest strategy is the growing number of orphans estimated at 14 million worldwide of which eleven million are in Africa, (NAC HIV/AIDS\STI\TB Intervention strategic plan, 2002-2005).

1.1 BACKGROUND

The population of Zambia now stands at 10.3 million people with an annual growth rate of 2.9% (NAC HIV/AIDS 2002-2005). More than 50% of the total population is less than 20 years of age and constitutes the most vulnerable group to HIV infection. This is a period when adolescents and teenagers become sexually active.

Currently 20% of the adult population aged between 15-49 is living with HIV in Zambia. By June 2000, there were 830,000 people over the age of 15 years reported to be living with HIV/AIDS. Of these 450,000 were women while 380,000

were men. Young women aged 15-19 were five times more likely to be infected, compared to males in the same age group. It is also estimated that 25% of pregnant women are HIV positive. Approximately 39.5% of babies born to HIV positive mothers were infected with the virus, (NAC HIV/AIDS/STI/TB Intervention strategic plan 2002-2005).

Although women constitute about half of Zambia's population, they are more infected by the virus than men. According to ZDHS (2003) it was reported that women are 1.4 times more likely to be HIV infected than men. This may be attributed to the fact that there are more men than women, one man can infect two or more women and women are engaged in sexual relationships earlier than men. About 18% of adult females are HIV positive compared to 13% for male adults.

In 1997, the Ministry of Health established a working group to coordinate Prevention of Mother to Child Transmission (PMTCT) of HIV infection, activities in the country. The PMTCT working group that commissioned a number of pilot projects to determine the feasibility of introducing PMTCT programme in different parts of the country. The working group piloted PMTCT in 6 sites: Chipata clinic, Tulemane rural health center in Mbala, University Teaching Hospital in Lusaka, Monze mission hospital, Mbala district hospital and Keembe in Northern Province. Later PMTCT was expanded to other parts of the country. The working group worked out plans to expand programmes to 72 districts in the country. By the year 2002, there were at least 43 health centers and currently 83 sites across the country offer PMTCT as an integral part of maternal and child health services. The PMTCT working group mandate was to ensure implementation of the five core interventions for preventing HIV transmission from infected pregnant women to their infants. These interventions are;

- Comprehensive maternal and child health (MCH) services (antenatal, postnatal and child health services).
- Voluntary and confidential counseling and testing (VCT).
- Antiretroviral prophylaxis

- Counseling and support for safe infant feeding practices.
- Optimal obstetrical practice

In 2003, according to Central Board of Health report, the PMTCT group counseled 72,000 women, of these 48,000 were tested, 11,000 were positive for HIV infection and 5,400 accepted Niverapine treatments. More than 20% of annual infections among the children are a result of MTCT. Most likely between 50 to 60 babies become newly infected with HIV each day in Zambia. The HIV prevalence rate was estimated to be at 16% for Zambia and out of these 25% were pregnant women. About 40% Of babies born to HIV positive mothers are infected with HIV, (HIV/AIDS Epidemic in Zambia, 2004).

In all the nine (9) provinces, interventions have been put in place by the Ministry of Health, such as provision of Antiretroviral drugs in late pregnancy and labor but much is required at the point of breastfeeding or infant feeding. Prior to HIV existence in Zambia breastfeeding was the only best method of infant feeding. This is because of its health benefits both for the mother and baby such as mother-baby bonding, promotion of infant mental development and generally improving child survival.

WHO reports that the transmission rates (Mother to Child transmission of HIV infection) are as follows:-

- | | |
|------------------------|--------|
| • During pregnancy | 5-10% |
| • During labor | 10-20% |
| • During breastfeeding | 10-20% |

The figures above shows that transmission is much higher during delivery and labor because of certain delivery procedures such as episiotomies, early rupture of membranes for more than 4 hours and bleeding during labor. During breastfeeding, breast conditions such as cracked nipples, mastitis and breast abscesses, sores in the mouth of the breastfeeding baby, may facilitate transmission of HIV from mother to baby. Moreover, transmission depends on the mother's viral load during

pregnancy, labor and breastfeeding. Therefore there is need to put across the effective interventions during delivery and breastfeeding so as to prevent MTCT.

However for the HIV positive mothers, the recommended feeding alternatives are exclusive breastfeeding and or replacement feeding. Exclusive breastfeeding is when the baby is fed on breast milk only for a period of six months, without giving water or any other liquids or foods. Where as Exclusive replacement feeding is feeding the baby strictly on infant formula and never on breast milk (NZP+ 2005). WHO recommends that when replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of breastfeeding by HIV infected women is recommended during the first 6 months of life, to minimize HIV transmission risk.

1.2 STATEMENT OF THE PROBLEM

Ndola district has a population of 404, 181 for the year 2006 According to a report written by CSO (Census 2000), the women in the childbearing age group represent 22% (88 040) of the total population, which are 404,181.

The PMTCT programme started in 2002 in Ndola and it has continued up to date. According to Ndola DHMT, PMTCT 2005 annual report indicated that about 11, 938 out of 88, 040 (80%) antenatal mothers were counseled and 6, 183 (52%) of those 11,938 who were counseled voluntarily agreed to test for HIV infection. About 1, 242 (27%) out of 6,183 tested HIV positive. However, only 68 (5.5%) out of 1,242 antenatal mothers who tested positive opted to adopt other methods of infant feeding (infant formula, heated milk etc), while 1 174 (95%) opted to breastfeed their babies despite knowing their HIV status. Moreover, when the babies born of HIV positive mothers, were tested for HIV infection at 18 months, about 24 out of 40 (60%) tested HIV positive (born from HIV positive mothers).

The problem of HIV transmission through breastfeeding has made safe infant feeding options one of the most complex and emotional aspect of MTCT prevention. This is because in many settings, the decision not to breastfeed comes with personal risks including the stigma, emotional and even physical consequences.

Therefore, individual counseling must cover not only the risks of morbidity and mortality for the infant, but also the potential consequences for the mother. In this view, Infant feeding counseling has been long recognized as important for all mothers and has become even more important with the emergence of HIV.

It is with this assumption that the investigator wants to find out how much knowledge HIV positive mothers have and their practices of infant feeding.

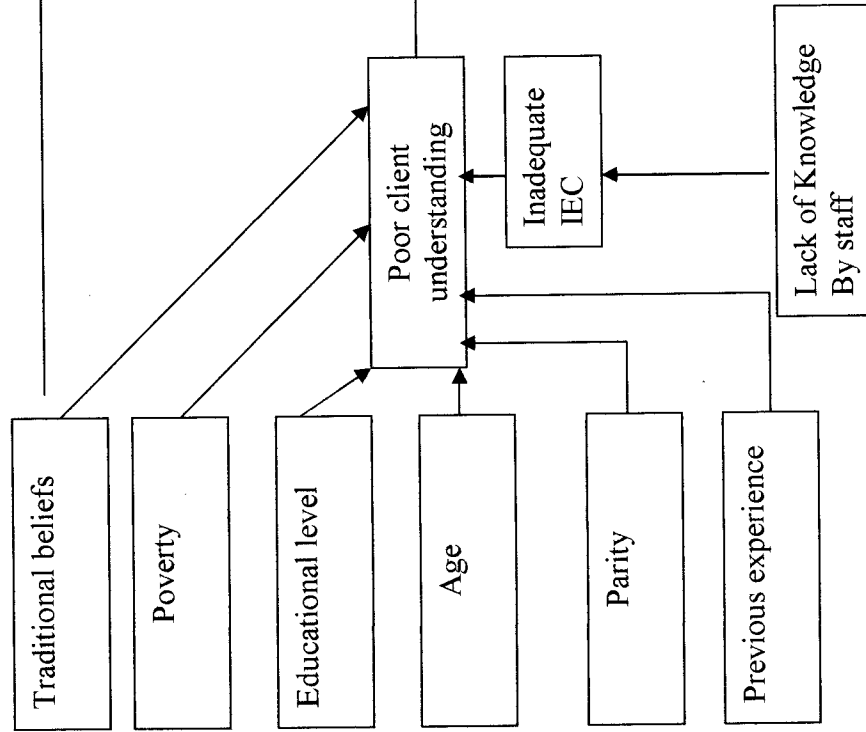
1.3FACTORS THAT INFLUENCE MATERNAL KNOWLEDGE AND PRACTICES OF BREASTFEEDING AND INFANT FEEDING OPTIONS.

In a situation where there is no intervention to PMTCT, it is estimated that 40% of infected women will pass on the virus to their babies. About 1/3 (10%-20%) will be through breastfeeding. The risk of transmission is increased when the mother has a higher viral load, or is newly infected and is on an advanced stage of the disease (Network of Zambian people living with HIV, 2005).

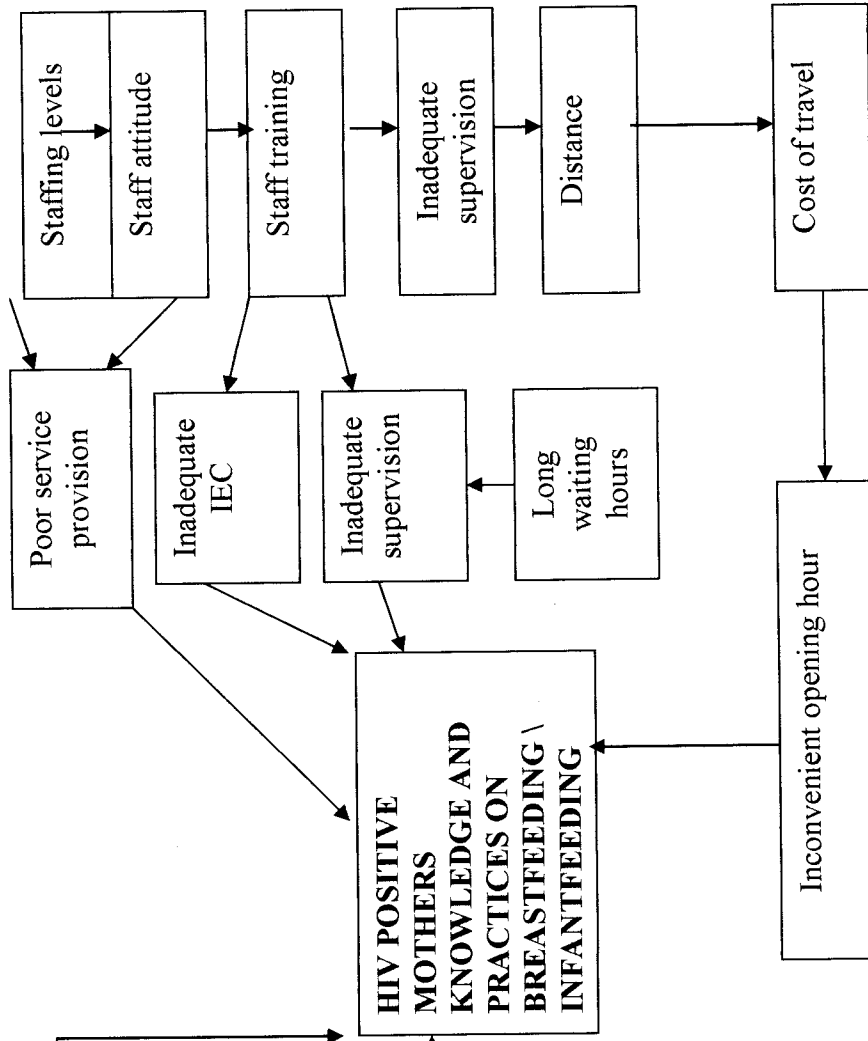
However, there are serious factors that influence HIV positive women knowledge and practices with regard to infant feeding such as service related factors, socio-economic and cultural factors.

1.4 PROBLEM ANALYSIS DIAGRAM

SOCIO-CULTURAL AND ECONOMIC FACTORS



SERVICE FACTORS



CLIENT FACTORS

A. SOCIO-CULTURAL AND ECONOMIC FACTORS

1. Age

The age of the mother determines to a large extent how much knowledge she has acquired on transmission of HIV from mother to baby. Most girls become pregnant as early as 15 years of age, as a result knowledge and experiences are limited especially on issues of HIV/AIDS. On the other hand, older women resist change because they have very little information on infant feeding options and breastfeeding in relation to HIV/AIDS.

2. Level of education.

Education helps women to make appropriate decisions because the educated can easily understand the health concepts and implications of breastfeeding and infant feeding options. It is more likely that an educated mother would not only depend on health workers advice on her health matters, but she would also read and understand documented information from literature.

The low level of education also affects ones ability to interact with other people and this helps mothers to learn from their friends and share ideas. Inadequate interaction can limit ones exposure to information on health. Therefore a mother's level of education has a significant influence on the knowledge levels and practices of infant feeding options.

3. Poverty

Generally about 80% of people in Zambia are poor, (CSO, 2000). In this case the economic status of woman influences their choices of infant feeding regardless of her HIV status. The fact that she cannot afford other options apart from breastfeeding, she is restricted to breastfeeding only. The economic status usually gives the purchasing power to a mother for infant feeding options.

4. Parity

Mothers with many children have had an experience on breastfeeding and if they are told to practice other methods of infant feeding, it is difficult for them to comprehend and change the practice.

5. Traditional beliefs and practices

In most African traditions, a mother is expected to breastfeed, it is unusual and also unacceptable for the mother not to breastfeed or stop breastfeeding abruptly at six months or below. She is regarded as a bad mother and may also feel inferior.

6. Stigma

The fact that HIV and breastfeeding options messages are disseminated everywhere, on media, in journals and everybody is aware of this information. Mothers are afraid of being stigmatized by the friends in the community if they are seen that they are not breastfeeding.

7. Previous knowledge

Maternal knowledge and previous practices of breastfeeding will influence their decision making on infant feeding because of the benefits that they have experienced.

B. SERVICE FACTORS

The health center staff and service provision can also have an influence on knowledge and practices of HIV positive mothers on breastfeeding infant feeding.

1. Staffing levels

Shortage of staff in health facilities leads to provision of poor quality of service and short cuts. With limited number of staff, inadequate health education on breastfeeding and other options in relation to HIV infection is given, hence the mother might not understand the implications of breastfeeding in her status and be able to make a well-informed choice.

2. Staff attitude

Apathy by the members of staff, not willing to explain in simple terms the implications of breastfeeding in the context of HIV infection and possibly demonstrating positioning and attachment of the baby to the breast, preparation of other options such as infant formula. The quality of information provided to mothers, may influence the choice of infant feeding options by the mothers.

3. Staff training

If the members of staff at the health facility are not trained in PMTCT and infant feeding, they will not be able to give adequate and factual information on HIV and breastfeeding implications.

4. Inadequate supervision of health care providers

If the health care providers are not supervised, they tend to do shortcuts and hence give inadequate information required for the HIV positive mother to decide on the method of infant feeding when she delivers.

5. Inconvenient opening hours

Late opening of the health facility inconvenience mothers to a large extent and that sometimes they can go back without receiving the necessary information on infant feeding that they initially came for.

6. Long waiting time

If mothers long wait for a long time, they become frustrated, tired and hungry before receiving any counseling and may not understand the infant feeding practices as the midwife explains.

7. Inadequate IEC

Inadequate IEC by members of staff leads to poor client understanding of the benefits of breastfeeding and infant feeding in relation to HIV infection.

8. Distance

Distance from the health center makes mothers miss the appointments with their counselors at the health center and this reduces privileges of health education and counseling on infant feeding.

1.5 JUSTIFICATION

The purpose of this study is to determine the knowledge and practices of HIV positive mothers on breastfeeding and infant feeding options. Despite mothers knowing their HIV status 94.5% of HIV positive mothers opt to adopt breastfeeding through out infancy period (NDHMT annual report 2005). Mothers are unable to practice infant-feeding options effectively. This study will inform mothers on breastfeeding and infant feeding in relation to HIV infection and what options they can practice. The study will also help the health care providers to revisit their skills of breastfeeding and infant feeding counseling skills. Thus the findings will help to reduce HIV transmission from mother to the child during breastfeeding. It is hoped that the findings of the research will consequently improve mother's breastfeeding and infant feeding practices in view of preventing mother to child transmission of HIV infection.

1.6 RESEARCH OBJECTIVES

1.6.1 General objectives

To determine the knowledge and practices of HIV positive mothers on breastfeeding and infant feeding options so as to prevent further spread of mother to child transmission of HIV infection

1.6.2 Specific objectives

1. To establish maternal knowledge levels regarding HIV transmission through breastfeeding
2. To identify maternal practices with regard to breastfeeding and infant feeding Options.
3. To explore maternal knowledge on alternative infant feeding methods among

HIV positive mothers.

4. To make recommendations to relevant authorities on breastfeeding and infant feeding options acceptable by the mothers.

1.7 HYPOTHESIS

1. The maternal knowledge level of breastfeeding and infant feeding options has a relationship with HIV transmission (influence the feeding practices).
2. There is no relationship between the maternal knowledge levels of HIV transmission and breastfeeding and infant feeding practices.

1.8 OPERATIONAL DEFINITIONS

1. Exclusive breastfeeding:

The feeding of a baby on breast milk only without giving liquids, solids and water up to 6 months of age except medicines.

2. Exclusive replacement infant feeding:

This is feeding of the infant who is receiving no breast milk with the diet that provides the nutrients infant need until the age at which they can be fully fed on family foods, usually the first 6 months with a suitable breast milk substitute.

3. Knowledge:

What one knows and understands about a certain phenomenon.

4. Infant:

A baby from time it is born up to 12 months of age.

5. Practice:

This is the ability to put something into action habitually.

6. HIV-positive

Refers to people who have taken an HIV test and who know that they tested positive, or to young children who have tested positive and whose parents or guardians know the result.

7. Infant feeding options

These are feeding practices other than breastfeeding that an HIV positive mother can opt to take up.

1.9 VARIABLES AND CUT OFF POINTS

According to Polit and Hunglar (1995), a variable is a word or concept that assumes different quantities or types. In other words it is a characteristic, which varies or changes in different people depending on the prevailing situation.

An independent variable is a characteristic or factor that is selected or manipulated in order to determine its influence on another variable. In contrast, a dependent variable is a characteristic that is observed and measured to determine how it responds to variations in an independent variable.

Dependent variables

- Knowledge
- Practices

Independent variables

- Age
- Parity
- Educational level
- Occupation
- Marital status

Table 1: Variables, Indicators and Cut off points

Variables	Indicators	Cut off points	Questions
Knowledge	High	Able to score 7 to 10 points in the knowledge category	Questions 10, 12, 15, 16, 17.
	Moderate	Able to score 4 to 6 points in the knowledge category	
	Low	0 to 3 points in the knowledge category	
Practice	Good	Able to score 6 to 10 points in the knowledge category	Questions 20, 21, 24, 26,28
	Bad	Able to score 0 to 4 points in the knowledge category	

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 INTRODUCTION

Literature review is a critical summary on a topic of interest, often prepared to put a research problem in context or as the basis for an implementation project (Polit and Hungler, 1997).

The purpose of literature review is to determine what is already known about the topic being studied so that the comprehensive picture of the state of knowledge on the topic can be obtained. It also gives the researcher clues to the methodology and instruments that people used before and therefore provide information on what has been tried in regard to approaches and methods and what types of data collecting instruments exist and do not work. It also helps the researcher to refine certain parts of the study.

The literature review for this study will mainly focus on HIV and infant feeding, it is presented and discussed from the works of previous scholars from around the globe. The literature is arranged in three parts, the global, regional and national perspectives..

Breastfeeding is normally the best way to feed an infant. A woman infected with HIV however can transmit the virus to her child during pregnancy, labor and breastfeeding. It is a public health responsibility to prevent HIV infection in infants and young children among pregnant women. It is also a public health responsibility to support optimal breastfeeding to prevent mortality due to AIDS. The delicate balance between breastfeeding lifesaving benefits and the risk of HIV transmission complicates optimal infant feeding in communities affected by HIV. HIV testing and counseling are important components of strategies to reduce mother to child transmission of HIV infection. Testing provides women and their partners with information on the presence or absence of HIV infection and a context in which to discuss infant feeding options.

Good counseling can help an HIV positive woman select and practice the safest infant feeding strategy for her individual situation. One to one counseling give counselors valuable insights into women's most realistic feeding options. Ideally women should be counseled during pregnancy and after delivery to ensure that they have adequate time to make infant feeding decisions.

2.2 GLOBAL PERSPECTIVE

UNAIDS, 1998 report estimated that by the beginning of 1998, over 30 million people were infected with HIV, the virus that causes AIDS. The virus continued to spread causing new infections. In 2001, the same report estimated that there were 4.3 million adults infected and out of these 1.8 million were women and 800,000 children; 1/3 of these infections were through breastfeeding, (NAC 2005).

In 1997, the World Health Organization (WHO) and United Nations Children's Fund (UNICEF), and the joint United Programmes HIV/AIDS (UNAIDS), issued a joint policy statement on HIV and infant feeding, followed by a development of a set of international infant feeding guidelines for the prevention of mother to child transmission of HIV in 1998. PMTCT related activities ranging from small-scale community research projects to a number of pilot and national programmes have been implemented since the development of 1998 guidelines.

The United Nations agencies policy on infant feeding and HIV was first developed in 1997. This policy emphasized the importance of informed infant feeding choice. The policy states that programs should provide HIV positive women with information and support to empower them to make fully informed decisions about how to feed their babies (UNAIDS/ WHO/UNICEF 1997).

In 1998, the United Nations published guidelines for HIV and infant feeding that outline various feeding options for HIV infected women. These options included commercial infant formula, home prepared infant formula, expressed and heated treated breast

milk, early cessation of breastfeeding, and wet nursing (this is when a baby is breastfed by a sister or someone else other than the biological mother). These guidelines state that all women should have access to information about MTCT. While guidance on optimal breastfeeding should be given to all mothers, these guidelines stressed that information on specific replacement feeding options should be provided only for women who know that they are HIV positive and can decide which option works best for them and their families (UNAIDS/UNICEF/WHO, 1998).

In 2000, WHO determined that, for mothers who are HIV positive and for whom replacement feeding is not acceptable, feasible, affordable, sustainable, and/or safe, exclusive breastfeeding is recommended during the first 6 months of life (WHO, 2000). This recommendation is a result of ample evidence on increased risks of diarrhea and other infectious diseases. These may occur when exclusive breastfeeding is not practiced, as well as on the basis of limited evidence on the increased risks of HIV transmission and when other liquids and foods are introduced. The new recommendations go further to suggest that HIV infected breastfeeding mothers should discontinue breastfeeding as rapidly as possible, taking into account their own situation once exclusive breastfeeding ends.

Infant and Young Child feeding (IYCF) adopted by the World Health Assembly in 2002 reiterated the substantial benefits that breastfeeding provides in the general populations while promoting fully informed choice of infant feeding methods by HIV positive women. The strategy further speculates the following: For mothers who are HIV negative or who do not know their HIV status, exclusive breastfeeding for the first 6 months and continued breastfeeding up to 2 years or longer with the addition of complementary food after 6 months is recommended.

2.3 REGIONAL PERSPECTIVE

The June 1998, UNAIDS report highlighted that 2\3 of all the people who were living with HIV in the world, lived in Sub-Saharan Africa. 70% of 16 000 world new infections

are in this region while 85% world deaths have been in Saharan region. In addition, 78% of the world children with HIV are also found in sub- Saharan Africa.

A study conducted in Botswana by the PMTCT advisory group (2001), evaluation of infant feeding practices revealed that 90% of HIV positive mothers decided to practice exclusive replacement feeding (using infant formula feeding) of their babies from birth, however the mothers received formula from the government. Over 90% of mothers who used formula gave it to their 0-6 months olds using a bottle and cleaned the bottle by boiling. When mothers ran out of infant formula, apparently there was a spillover effect on exclusive replacement feeding as well as exclusive breastfeeding for those HIV positive mothers who opted to practice exclusive breastfeeding. The study further revealed that cessation of breastfeeding was not a success story, most HIV positive mothers did not recall receiving advice about feeding after 6 months, the report also showed that there was poor knowledge on infant feeding counseling. Many did not feel confident in counseling on infant feeding practices. This simply means that adequate knowledge should be equipped to the staff and mothers on infant feeding counseling (Booher, 2004).

In Tanzania, a study done by Paoli et al (2000) on breastfeeding promotion and the dilemma posed by AIDS revealed that not breastfeeding, was seen as a complicated choice and mothers would likely be labeled as HIV infected and face a high risk of stigmatization. Other dilemmas include educational challenges related to misconceptions, stigma and how to advise mothers on infant feeding options. Efforts to involve husbands, families and communities should be considered as a way to prevent this.

In Uganda, a study on by Bakaki PM (2000) on lessons and experiences with early cessation of breastfeeding among HIV infected women in Kampala revealed that age at cessation of breastfeeding was 8 days to 7 months for single mothers, employed women and those with fewer than 3 children stopped soonest. Most women especially nearing cessation of breastfeeding practiced mixed feeding. The duration was one (1)

week to six (6) months of breastfeeding, and those who stopped abruptly had introduced other feeds earlier. Others stopped gradually (e.g. breastfeeding only at night) while some left the baby with relatives. This clearly shows that HIV infected women do not receive adequate knowledge on infant feeding practices (Booher, 2004).

In Rwanda, a study by Pharm et al (2000) on Rapid assessment of PMTCT revealed that, in general clients did not receive adequate information on danger signs during pregnancy, breastfeeding and replacement feeding. Pretest counseling and health talks were found by clients to be useful. Confidentiality was maintained but privacy and shortage of staff in this service were seen as constraints. Infant feeding counseling is the weakest service in the PMTCT package because of the lack of clear protocols of guidelines that providers can refer to. Since the government cannot sustain artificial milk as infant feeding choice at this time, exclusive breastfeeding with early weaning after 4-6 months is the most affordable and accessible infant feeding choice for new mothers. Also those providers recommend replacement feeding to their clients even though these choices are not financially sustainable. These observations indicate that counselors were inconsistent in the way they presented information on infant feeding, early cessation, advantages and disadvantages of infant formula and modified animal milk. Clients were not taught on optimal methods of breastfeeding (Booher, 2004).

In Kenya, a study done by Oguta et al (2001) on maternal knowledge of PMTCT and infant feeding practices revealed that only 9% of women answered all questions correctly (had high knowledge on MTCT), 46% had adequate knowledge on HIV and infant feeding and 13,5% had no knowledge at all. Most of the HIV infected mothers were breastfeeding because they did not know their status early enough. Alternatives to breastfeeding: cows milk was most acceptable and expensive, very few mothers knew of the need for modifications of cows milk, wet nursing was acceptable for older but not younger women. Formula was considered good but unaffordable and expression of breast milk was considered unacceptable. Knowledge about PMTCT

was linked to less social rejection of non-breastfeeding mothers, also had no effect on initiation, frequency or duration of breastfeeding. This means that much effort is required in the area of maternal knowledge on HIV transmission and infant feeding to most African mothers (Booher, 2004).

In Zimbabwe, a study on Infant feeding, which was done by Chitsike (2000), also revealed that knowledge of HIV transmission through breast milk was very good. About 84% mothers cited breastfeeding, 16% infant formula, 5% expressed breast milk and 1% home prepared milk. The mothers felt it was their decision to make a choice if only money was available. This shows that there are still barriers to decision making in the context of HIV and breast-feeding such as economic factors, stigma and cultural beliefs (Booher, 2004).

Other studies conducted in South Africa on breastfeeding promotion and infant feeding practices by Bentley et al (2002), revealed that breastfeeding advice was received from various sources and that there is so much exposure to conflicting advice and information hence the need for comprehensive, coordinated and specific messages regarding exclusive breastfeeding.

2.4 NATIONAL PERSPECTIVE

Zambia has not been spared with HIV ever since it was noticed in 1980s. More than 20% of new infections annually are as a result of MTCT. Between 50 –60 babies become newly infected with HIV each day in Zambia (NAC 2004). In recognizing this issue Zambia developed a policy on breastfeeding and infant feeding options to prevent mother to child transmission of HIV. The policy is based on recommendations and protocol of the World Health Organization and the United Nations Agency, which stipulates that:

- Informed choice for HIV positive mothers so that they have complete information and support to empower them to make fully informed decisions on how best to feed their babies.

- Guidelines on various feeding options for HIV infected women.
- Exclusive breastfeeding for the first 6 months of life for HIV positive mothers, where replacement feeding is not acceptable, feasible, affordable, sustainable and/or safe.
- Discontinuing of breastfeeding as rapid as possible once other foods have started.

In attempting to prevent mother to child transmission off HIV, Zambia has developed 5 core interventions such as:

- Comprehensive maternal and child health services.
- Voluntary, counseling and testing.
- Use of antiretroviral drugs.
- Safe infant feeding practices.
- Precautionary obstetric practices.

UNAIDS recommends VCT as a critical entry point to PMTCT prevention programs. UNICEF recognized Zambia to be one of the few countries that have integrated VCT in antenatal care (UNAIDS 2002). However, much health information is required in the area of knowledge acquisition on mother to child transmission of HIV and infant feeding among mothers if the program has to be effective (Booher, 2004).

A study by Kanene (1999), conducted a study on maternal knowledge, attitude and practice towards HIV transmission through breastfeeding in Lusaka urban, it was observed that 12% of mothers did not have any knowledge on how children get infected with HIV. With further examination of knowledge, attitude and practice in the same study revealed that mothers with higher parity still insisted that they would breastfeed even if they were found to be HIV positive. Only young mothers reported that they would not breast feed if they were found positive despite the benefits of breast milk.

Another study by Mpabalwani, et al (1993), done in Zambia on the role of breastfeeding in transmission of HIV concluded that infant feeding should be studied if HIV could be prevented through breastfeeding.

Another study by Chase C, (2002) on breaking the silence and ending the stigma, concluded that not breastfeeding is seen as an indication of positive status and causes of stigmatization, yet women who continue to breast are accused of killing the child and sometimes women just pretend to be HIV negative.

Recommendations around infant feeding revealed mixed messages, some women heard from the local mission hospital that HIV positive mothers should not breastfeed as their breast milk contains germs and reduced the baby's chance of survival. Also a senior others thought that babies should be exclusively breast-fed because formula is not good for babies.

In this view PMTCT programs should take into account the extent of fear, misconceptions and resulting stigma in the community and care should be integrated into preventive, education, care and support initiatives that address these fears. Communities need wider implementation of PMTCT and VCT services.

2.5 CONCLUSION

The above literature gives evidence that a lot of studies have been done on infant feeding options but there is still not much improvement especially on the options other than breastfeeding. It has been revealed from the literature that mother's health, the state of milk and the child's health are closely linked.

The literature has also revealed that although PMTCT program has improved but more is needed, the increased practice among HIV positive mothers of choosing exclusive breastfeeding over replacement feeding suggest that stigma and costs are responsible. HIV positive mothers are not changing from exclusive breastfeeding to replacement feeding at 6 months; they are still breastfeeding up to 12 months.

More effective counseling is needed on cessation of breastfeeding and that there is need to develop a tool to improve service delivery. Comprehensive systems for monitoring infant feeding and counselor supervision should be organized.

CHAPTER THREE

3.0 METHODOLOGY

3.1 INTRODUCTON

Research methodology is the method or technique used by the scientist to collect data to use statistical manipulation and to arrive at a logical conclusion. Research methodology can be defined as steps, procedures and strategies for gathering and analyzing data in a research investigation (Polit and Hungler, 1997).

3.2 RESEARCH DESIGN

A research design is a plan or strategy of conducting a study (Polit and Hungler, 1997).

In this study a cross sectional study design was used. In a cross sectional study, the data collected define or describes some phenomenon which sample may subject to ascertain change at a given point of time. The reason cross sectional study design was to collect data from a large group of HIV positive postnatal mothers and also it enabled the researcher to describe in detail the knowledge and practices of HIV positive mothers who were breastfeeding. In a descriptive study the researcher observes, describes and documents aspects of the situation.

3.3 RESEARCH SETTING

The study was conducted at Ndola District Health Management Team, which had a population of 400,100 served by 20 health centers. The five (5) health centers were selected namely: New Masala, Lubuto, Bwafwano, Kawama and Kabushi health centers. These above health centers were chosen because they all had a large catchment population, which range from 21,000 to 34,000 and also contributed to the high HIV prevalence rate which range from 16% to 27%.

These health centers offer both preventive and curative services. Among the preventive health services offered are maternal and neonatal health services, which include antenatal, intra-natal and postnatal services except for Kabushi clinic, which does not offer delivery services but offer a PMTCT programme.

These health centers are within the radius of 6 to 11 kilometers from Ndola Central Hospital. They have antenatal examination and delivery rooms with bed capacity of 15 beds; in antenatal, 5 delivery beds and 10 beds in postnatal wards.

3.4 STUDY POPULATION

The term population refers to the entire number of units under study and consists of persons, objects, attributes, qualities and behaviors of people (Polit and Hungler, 1995). In this study, the study population was postnatal mothers who are HIV positive and were attending postnatal clinic at the stated study sites.

3.5 SAMPLING METHOD

"Sampling is a process of selecting the sample or subjects from the population (Polit and Hungler 1995)". The sample size comprised 50 HIV positive mothers. The inclusion criterion was post natal, breast feeding and multiparous woman. The investigator used the PMTCT register to identify those who would meet the criteria. In order to arrive at the respondent, the investigator used systematic sampling method. This was done by listing all mothers who had met the criteria, this was known as the sampling frame. Thereafter the sample size was divided by the study population ($10/50=1/5$), which was known as a sampling fraction. Therefore, the investigator interviewed one respondent after every five (5) respondents.

3.6 SAMPLE SIZE

"A sample is a subset of a population selected to participate in a research study (Polit and Hungler: 1997)". The sample size was 50 and this was drawn from postnatal mothers who tested HIV positive antenatally and they have gone for 1st week postnatal visit.

3.7 DATA COLLECTION TOOL

In this study, the researcher used a semi-structured interview schedule to collect data. This contained both structured and semi structured questions. The interview schedule was chosen because it was applicable. It also helped to reduce non-response rate although the respondents would not give adequate information because of the interviewers presence. However, the limitation was addressed by creating a good relationship with the respondents. Then each day data was checked for completeness.

3.8 DATA COLLECTION TECHNIQUES

Data was collected through face-to-face interview, which was an interaction between the interviewer and the respondent. This took place in a private room at the health center, to ensure anonymity and confidentiality in order to get honest responses. To control for anticipated low response rate and ambiguity, the questions in the questionnaires were made simple and straightforward.

3.9 PILOT STUDY

A pilot study is defined as a "small scale version or trial run of a major study whose main function is to obtain information for project or for assessing its feasibility (Polit and Hungler: 1997)". For this study, a pilot study was conducted at Chipulukusu health center in Ndola. The interviews were conducted on five (5) randomly selected (10% of 50 actual respondents =5 mothers) HIV positive postnatal mothers. This helped the investigator to test the validity, reliability and practicability of the data collection tools and techniques used in the actual study.

3.2 PLAN FOR DATA ANALYSIS AND PRESENTATION OF THE RESULTS

After data collection, the data from closed ended questions were entered on the data master sheet. Responses from open-ended questions were coded, categorized and entered on the data master sheet. Thereafter data was processed manually with the aid of a calculator.

3.3 PLAN FOR DISSEMINATION OF FINDINGS

Copies of the study finding have been submitted to Post Basic Nursing Department (PBN), School of Medicine. The other reports have been sent to Ndola District Health Management Team, health centers; New Masala, Kabushi, Lubuto, Bwafwano and Kawama, where the study was undertaken. A dissemination meeting was arranged for example at one of the Zambia's Nurses Association conferences in the district.

4. ETHICAL CONSIDERATIONS

Permission to carry out the study was obtained from the School of Medicine, Head of Department of Post Basic Nursing, the Provincial Health Director, District Director of Health both of Ndola and the Sister in charges at the health center. Letters were sent to all the above-mentioned officers. The right of privacy was observed by obtaining direct consent for participation from the respondents and measures were taken to ensure informed consent and confidentiality. To ensure anonymity, the investigator omitted the names of the respondents. Informed consent was collected from the mothers after explaining the objective of the study. All information collected from the mother was held in confidence.

CHAPTER FOUR

4.2 INTRODUCTION

4.2 DATA ANALYSIS

Data analysis is a systematic organization and synthesis of research data and the testing of hypothesis using data (Polit and Hungler, 2001). All interview schedules were checked for accuracy, completeness and consistency in responses following data collection. The responses for open-ended questions were categorized and coded. All data was entered on data master sheet. Responses to variables were analyzed manually with the aid of the pocket calculator. Descriptive statistics such as percentages and frequency distribution have been used.

4.0 DATA ANALYSIS AND PRESENTATION

Data presented in this chapter was collected from 50 respondents who were all HIV positive and breastfeeding mothers. Data was collected using a structured interview schedule during the month of August to September 2006.

4.3 PRESENTATION OF FINDINGS

Presentation of finding has been done in the form of pie charts, bar graphs and tables. Tabulations have been used for easy interpretation and for the purpose of drawing meaningful inferences or conclusions.

Table 2: Demographic characteristics

Age distribution	Frequency	Percentage
15-24	24	48
25-34	20	40
35-44	6	12
Total	50	100
Marital status		
Single	5	10
Married	36	72
Divorced	0	0
Widowed	5	10
Separated	4	8
Total	50	100
Education level		
None	1	2
Primary	22	44
Secondary	26	52
College	1	2
Total	50	100
Occupation		
None	4	8
Housewife	35	70
Others	11	22
Total	50	100
Parity		
0-2	13	26
1-3	21	42
4-5	9	18
6-8	7	14
Total	50	100

Table 1 shows the demographic characteristics of the respondents, which include age, marital status, education, occupation and parity. Majority of the respondents were aged between 15 – 24 years that is 24 (48%) while no respondent was aged above 44 years. The respondents interviewed who were married represented 36 (72%) while 4 (8%) were separated from their husbands, 26 (52%) respondents reached secondary education, while 1 (2%) respondent had no education. 35 (70%) of the respondents

were housewives while 4 (8%) of them were doing nothing. Majority parity 1-3, were 21 (42%) while 7 (14%) of the respondents had children from 6 to 8.

Table 3: Knowledge on breastfeeding and infant feeding options.

Breastfeeding\infant feeding options	Frequency	Percentage
Yes	47	94
No	3	6
Total	50	100

Table 2 shows that 47 (94%) of the respondents had heard about breastfeeding or infant feeding options while 3 (6%) had never heard about breastfeeding or infant feeding options.

Table 4: Source of information

Source	Frequency	Percentage
Friends	2	4
Relatives	1	2
Health personnel	41	82
Media	2	4
Others	4	8
Total	50	100

This table shows the sources of information about breastfeeding and infant feeding options for the respondents. Most of the respondents' source of information on breastfeeding and infant feeding options was from health personnel, 41 (82%) and the least that is 1 (2%) obtained from their relatives.

Figure 1: Definition of breastfeeding

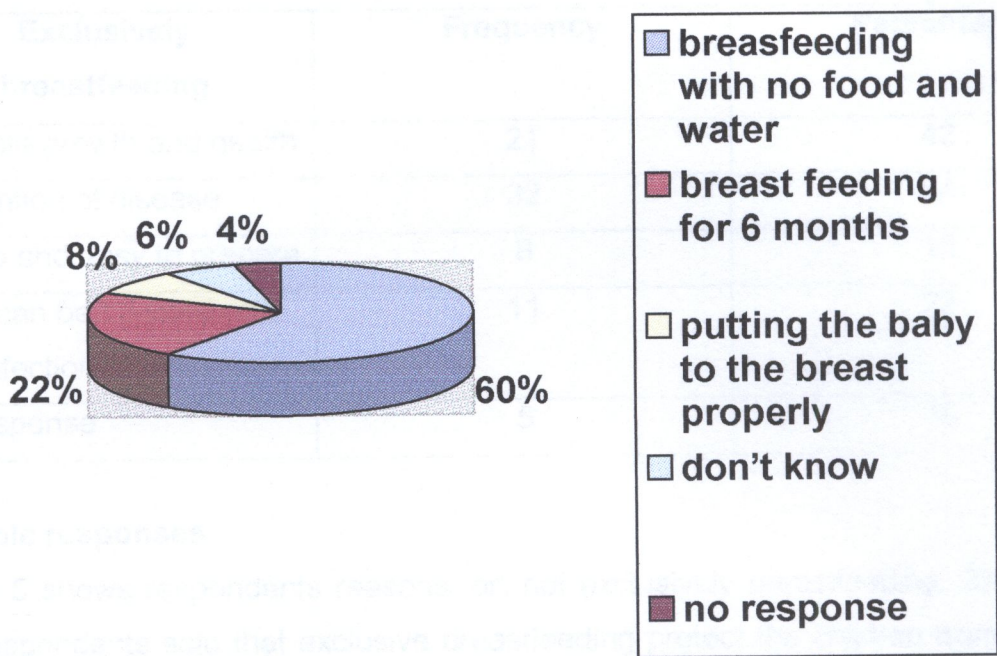


Figure 1 shows different definitions of exclusive breastfeeding. 30 (60%) of the respondents defined exclusive breastfeeding as breastfeeding the child for six months without giving water or food, while 3 (6%) did not know what exclusive breastfeeding is and 2 (4%) did not respond.

Table 5: Is Exclusive breastfeeding good for the child?

Exclusive breastfeeding	Frequency	Percentage
Good	45	90
Bad	5	10
Total	50	100

The table shows the respondents opinions about exclusive breastfeeding, whether it was good or bad. 45 (90%) of the respondents said that it is good for HIV positive mothers to breastfeed their babies exclusively while 5(10 %) said that it is not good to breast feed.

Table 6: Reasons for not exclusively breastfeeding

Exclusively breastfeeding	Frequency	Percentage
Promote growth and health	21	42
Prevention of disease	32	64
Cheap and easy to prepare	8	16
Baby can be infected with HIV infection	11	22
No response	5	10

Multiple responses

Table 5 shows respondents reasons for not exclusively breastfeeding, 32 (64%) of the respondents said that exclusive breastfeeding protect the children from diseases while 5(10%) said nothing.

Table 7: Heard about PMTCT

Heard of PMTCT	Frequency	Percentage
Yes	50	100
No	0	0
Total	50	100

Table 6 shows that all respondents (100%) had heard about transmission of HIV infection from mother to child.

Table 8: Modes of transmission of HIV from mother to child

Transmission of HIV from mother to child	Frequency	Percentage
Breastfeeding only	5	10
Pregnancy	3	6
Labour only	16	32
Breastfeeding and labour	25	50
Pregnancy, labour and breastfeeding	13	26

Multiple responses

25 (50%) of the respondents said that HIV could be transmitted from mother during breastfeeding and labour while 3 (6%) said that HIV could only be transmitted during pregnancy only.

Table 9: Mode of MTCT during Breast feeding

MTCT during pregnancy	Frequency	Percentage
Sore nipples	23	46
Breastfeeding more than 6 months	20	40
Mixed feeding	16	32
Ill health of mother	8	16
Don't know	4	8
Not sure	8	16

Multiple responses

Table 9 shows the factors that predispose to MTCT during breastfeeding, 23 (46%) of the respondents said that sore nipples predispose to transmission of HIV from mother to child during breastfeeding while 4 (8%) did not know the predisposing factors.

Table 10: Transmission of HIV from mother to child

Transmission of HIV	Frequency	Percentage
Yes	12	24
No	35	70
Not sure	3	6
Total	50	100

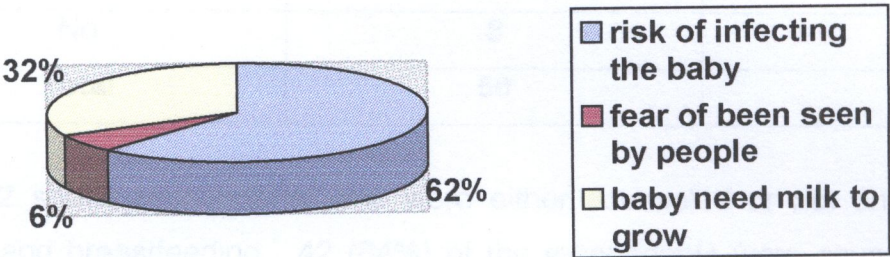
Table 10 shows responses about whether all HIV positive mothers are likely to transmit the infection to their children or not. 35 (70%) of the respondents said that not all HIV positive mothers could transmit HIV infection to their children while 3 (6%) respondents were not sure.

Table 11: Is breastfeeding good for HIV positive mothers?

Breastfeeding	Frequency	Percentage
Good	19	38
Bad	31	62
Total	50	100

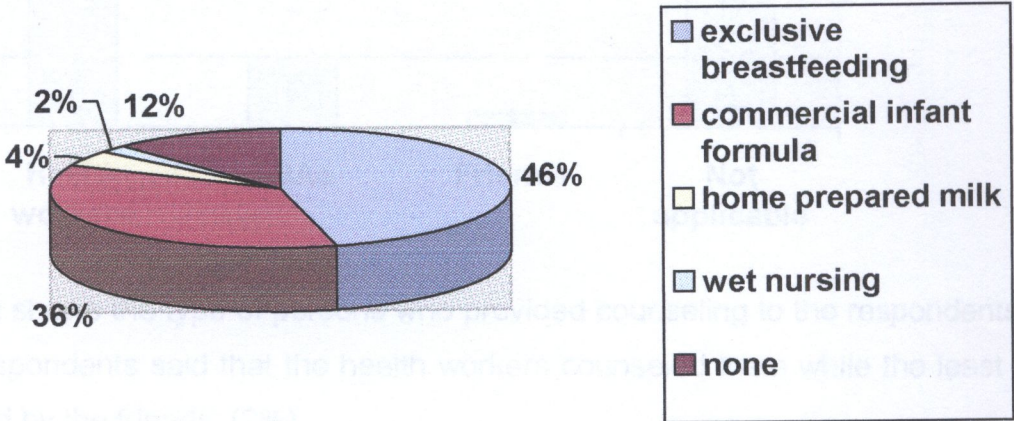
Table 11 shows the respondents' choice as to whether breastfeeding is good for HIV positive mothers or not. 31 (62%) of the respondents said that it is not good for HIV positive mothers to breastfeed while 19 (38%) said that it is good.

Figure 2: Reasons for breastfeeding or not breastfeeding.



This chart shows the respondents reasons for breastfeeding or not breastfeeding, 31 (62%) of the respondents said that breastfeeding increases the risk of infecting the babies while 3 (6%) said that they are afraid of been seen by people.

Figure 3: Respondents preferences of infant feeding options



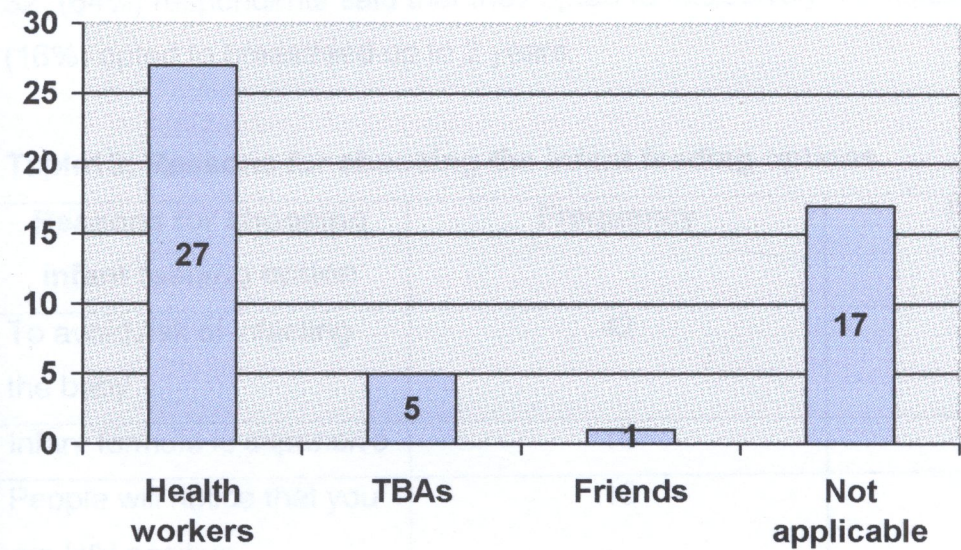
This chart shows that 23 (46%) of the respondents said that exclusive breastfeeding is the best choice for infant feeding while 1 (2%) said wet nursing is the best choice.

Table 12: Counseling on infant feeding options and breastfeeding.

Counseled	Frequency	Percentage
Yes	42	84
No	8	16
Total	50	100

Table 12 shows respondents who were either counseled or not on infant feeding options and breastfeeding. 42 (84%) of the respondents were counseled on infant feeding options while 8 (16%) were not counseled.

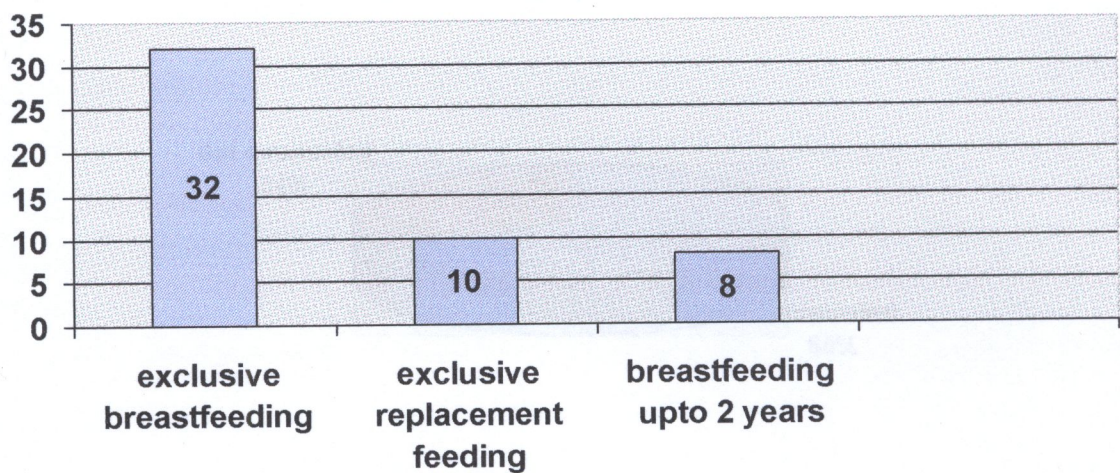
Figure 4: Counseling Providers



The chart shows the type of persons who provided counseling to the respondents. 27 (54%) respondents said that the health workers counseled them while the least were counseled by the friends (2%).

Figure 5: Infant feeding options

Figure 5: Counselor on infant feeding options



This chart shows the infant feeding options that the respondents decided to take up. 32 (64%) respondents said that they opted to exclusively breastfeed while 8 out of 50 (16%) opted to breastfeed up to 2 years.

Figure 7: Counselor's Reasons

Table13: Reasons for choosing the infant feeding options

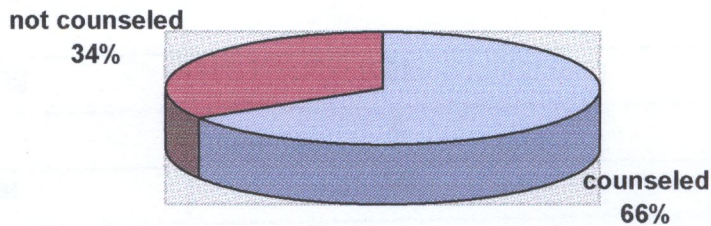
Reasons for choosing infant feeding option	Frequency	Percentage
To avoid risk of infecting the baby	42	84
Infant formula is expensive	19	38
People will notice that you are HIV positive	10	20
Lack of money to buy formula	19	38
Just want to breastfeed	5	10

Multiple responses

44 (84%) of respondents said that exclusive breastfeeding and exclusive replacement feeding reduces HIV transmission while 5 (10%) said that they would merely like to breastfeed.

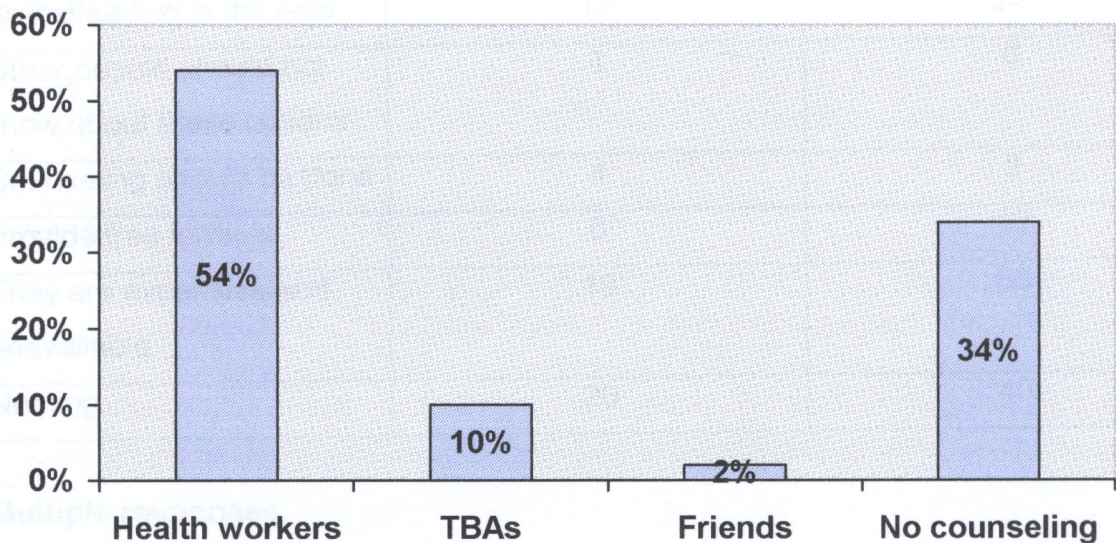
Table 13: Measures to PMCT taking respondents

Figure 6: Counseled on infant feeding options.



The chart shows the respondents who were counseled on the infant feeding option that they adopted. 33 (66%) of the respondents were counseled on infant feeding option that they chose while 17 (34%) were not counseled.

Figure 7: Counseling Providers



This chart shows the counselors who provided counseling to the respondents on the option that they chose. The majority of respondents were counseled by health workers 27 (54%) while their friends counseled only 1 (2%).

Table 15: Measures to PMTCT during breastfeeding

Suggestion	Frequency	Percentage
Give drugs	28	56
Health education on prevention	10	20
No breastfeeding	21	42
No response	4	8
Total	50	100

Multiple responses

This table shows the assumptions that respondents said should be put in place to prevent MTCT during breastfeeding. 26 (56%) of the respondents said that the government should give drugs while 4 (8%) had nothing to say.

Table16: Infant feeding options.

Comments	Frequency	Percentage
Breastfeeding is the best	12	24
Other people should not know about these options	4	8
Counseling should be done	4	8
Provide free formula	6	12
They are expensive and unavailable	19	38
Nothing	20	40

Multiple responses

Table 16 shows the respondents feelings and comments about infant feeding options. 40% of mothers had nothing to say while counseling should be done and other people should not be aware of these options.

CROSS TABULATIONS

Table 16: RELATIONSHIP BETWEEN LEVEL OF KNOWLEDGE AND AGE.

Knowledge	Age			Total
	15-24	25-34	35-44	
High	16(67%)	13(68%)	6(100%)	35(70%)
Moderate	8(33%)	7(35%)		15(30%)
Low				
Total	24(48%)	20(40%)	6(12%)	50(100%)

6 (100%) of the respondents aged between 35-44 years had high knowledge while 8 (33%) of those aged 15-24 had moderated knowledge on infant feeding options.

Table 17: RELATIONSHIP BETWEEN LEVEL OF KNOWLEDGE AND MARITAL STATUS.

Knowledge	Marital status				Total
	Single	Married	Widowed	Separated	
High	3(60%)	21(58%)	3(60%)	2(50%)	29(58%)
Moderate	2(40%)	14(39%)	2(40%)	2(50%)	20(40%)
Low		1(2.7%)			1(2%)
Total	5(10%)	36(72%)	5(10%)	4(8%)	50(100%)

The widowed and single respondents had equal knowledge 3(60%) on exclusive breastfeeding in relation to mother to child transmission of HIV while the married respondents had low knowledge, 1(2.7%).

Table 18: RELATIONSHIP BETWEEN LEVEL OF KNOWLEDGE AND EDUCATION

Knowledge	Education				Total
	None	Primary	Secondary	Tertiary	
High	1(50%)	16(73%)	19(73%)	1(50%)	37(74%)
Moderate		6(27%)	7(27%)		13(25%)
Low					
Total	1(2%)	22(44%)	26(52%)	1(2%)	50(100%)

19(73%) respondents who had reached secondary education had high knowledge while 6(27%) of those who only gone up to primary school had low knowledge.

Table 19: RELATIONSHIP BETWEEN LEVEL OF KNOWLEDGE AND OCCUPATION.

Knowledge	Occupation				Total
	None	Housewife	Formal	Informal	
High	3(75%)	24(69%)	3(60%)	6(100%)	36(72%)
Moderate	1(25%)	11(31%)	2(40%)		14(28%)
Low					
Total	4(8%)	35(70%)	5(10%)	6(12%)	50(100%)

100% (6) respondents (informal) had high knowledge on infant feeding options while 25% (1) of those who have never been to school had low knowledge.

Table 20: RELATIONSHIP BETWEEN LEVEL OF KNOWLEDGE AND PARITY

Knowledge	Parity				Total
	0-1	2-3	4-5	6-8	
High	12(92%)	15(68%)	5(56%)	5(83%)	37(74%)
Moderate	1(8%)	6(28%)	4(44%)	2(28%)	13(26%)
Low					
Total	13(26%)	16(32%)	9(18%)	7(14%)	50(100%)

12 (92%) respondents with 0-1 child had high knowledge on infant feeding options while 1(8%) of the same group had moderate knowledge.

Table 21: RELATIONSHIP BETWEEN INFANT FEEDING PRACTICES AND AGE.

Practices	Age			Total
	15-24	25-34	35-44	
Good infant feeding practices	14(58%)	12(60%)	4(67%)	30(60%)
Bad infant feeding practices	10(42%)	8(40%)	2(33%)	20(40%)
Total	24(44%)	20(40)	6(12%)	50(100%)

4(67%) of the respondents aged between 35- 44 were practicing good infant feeding options while 2(33%) of the same age respondents were practicing bad infant feeding options.

Table 22: RELATIONSHIP BETWEEN INFANT FEEDING PRACTICES AND MARITAL STATUS

Practices	Marital status				Total
	Single	Married	Widowed	Separated	
Good infant feeding practices	2(40%)	18(50%)	5(100%)	1(25%)	26(72%)
Bad infant feeding practices	3(60%)	18(50%)		3(75%)	24(48%)
Total	5(10%)	36(72)	5(100%)	4(8%)	50(100%)

5(100%) respondents who were widowed were practicing good infant feeding options while 1(25%) of the respondents who were single were practicing bad infant feeding practices.

Table 23: RELATIONSHIP BETWEEN INFANT FEEDING PRACTICES AND EDUCATION.

Practices	Education				Total
	None	Primary	Secondary	Tertiary	
Good infant feeding practices	1(100)	9(41%)	16(62%)	1(100)	27(54%)
Bad infant feeding practices		13(59%)	10(38%)		23(46%)
Total	1(2%)	22(44%)	26(52%)	1(2%)	50(100%)

1(100%) of the respondents who had reached tertiary level education were practicing good infant feeding options while 10 (38%) of those who have reached secondary school were practicing bad feeding practices.

Table 24: RELATIONSHIP BETWEEN INFANT FEEDING PRACTICES AND OCCUPATION.

Practices	Occupation				Total
	None	Housewife	Formal	Informal	
Good infant feeding practices	3(75%)	20(60%)	4(80%)	4(67%)	31(62%)
Bad infant feeding practices	125%)	15(40%)	1(20%)	2(33%)	19(38%)
Total	4(8%)	35(70%)	5(10%)	6(12%)	50(100%)

(80%) of the respondents who were in formal employment were practicing good infant feeding options while 1(25%) of those who were not doing anything were practicing bad infant feeding options.

Table 25: RELATIONSHIP BETWEEN INFANT FEEDING PRACTICES AND PARITY

Practices	Parity				Total
	0-1	2-3	4-5	6-8	
Good infant feeding practices	6(46%)	11(53%)	6(67%)	6(43%)	29(58%)
Bad infant feeding practices	7(53%)	10(47%)	3(33%)	1(14%)	21(42%)
Total	13(26%)	21(42%)	9(18%)	7(14%)	50(100%)

6 (67%) of the respondents with 4-6 children were practicing good infant feeding options while 1 (14%) of those with 6-8 children were practicing bad infant feeding options.

CHAPTER FIVE

5.0 DISCUSSION OF FINDINGS

5.1 INTRODUCTION

This discussion is based on findings derived from a sample of 50 HIV positive breastfeeding mothers who were selected using systematic sampling method at the time of the study. The purpose of the study was to determine knowledge and practices of infant feeding options between the HIV positive breastfeeding mothers. This discussion was centered on the following variables;

- Demographic data
- Knowledge
- Practice
- Age
- Marital status
- Educational level
- Occupation
- Parity

5.1.2 DEMOGRAPHIC DATA

The majority of the respondents were aged between 15-24 years representing 48% of the study sample. This is a younger group of youths in the child-bearing age group (15-49), which is sexually active. This shows that there is still a high risk of mother to child transmission of HIV and a reduction of the life span.

Most of the respondents (72%) were married. The study revealed that the youngest age group in the study sample was married and HIV positive. This reflects the fact that the younger ones get married the higher the chances of being HIV positive. On the other hand, 10% were widowed, this could be an adverse consequence of HIV/AIDS infection at an individual level.

The respondents' educational background ranged from none (2%) to the majority (52%) who reached secondary education. This could be attributed to the fact that there are many schools in the district that are within reach and some of these mothers were drop outs from school either due to unwanted pregnancy or lack of financial resources.

Majority of the respondents were housewives about 70% while only 10% were formally employed. This shows that poverty has led to women to have little access to productive resources such as technology and information, essential commodities and because of this most women are economically dependent on a man, which contributes to their inability to make decisions.

Most respondents had children 1-3 (42%) while 14% had 6-8 children. This is due to the fact that the reproductive age starts at 15- 49, many women begin their child bearing as early as 15 years old. Socio-cultural beliefs subordinate women, they are forced to have as many children as possible.

5.1.3 KNOWLEDGE

Essentially knowledge means familiarity with facts acquired by personal experience, observation or study. Once one acquires knowledge he/she is able to see how parts or aspects of something relates to another, (Cole 2002). In this study, level of knowledge of HIV positive mothers on breastfeeding and infant feeding options was high

As shown in table 3 page 28, the study revealed that 94% of the respondents had heard about breastfeeding and infant feeding in relation to HIV transmission while only 6% had not. Moreover the study revealed that 100% of the respondents aged 35-44 years had high level of knowledge on infant feeding. This could be attributed to the fact that this group of respondents had been to antenatal clinic several times and had received information on HIV and breastfeeding. On the other hand, this shows that there is sensitization on PMTCT in the health facilities. This is in line with a study that

was by Oguta et al (2001) in Kenya to determine maternal knowledge on HIV and breast milk alternatives for HIV positive mothers. She reported that 99.8% of women had high knowledge on MTCT, 46% had adequate knowledge on HIV and infant feeding and 13.5% had no knowledge at all.

The study further revealed that 82% of the respondents had heard about infant feeding alternatives in relation to HIV infection from the health providers in their respective health facilities while 2% got information from their relatives. This clearly indicates that health providers give information, education and communication to mothers during their antenatal visits. Another study done in Zambia by Omari et al (2000) on infant feeding revealed that MTCT knowledge was high, 85% of mothers knew about HIV transmission through breastfeeding and HIV positive mothers intended to breastfeed for a short time.

The study also sought to find out the relationship between the respondents educational level and knowledge on infant feeding options. It was revealed that there is a significant relationship, notably 73% of those respondents who had reached secondary level had high knowledge on infant feeding options and HIV infection. This means that women with some education are more likely to understand the concepts of infant feeding options and breastfeeding than those with no educational background.

In relation to occupation and knowledge on infant feeding, the study revealed that 100% of those respondents who were informally employed had high knowledge. This entails that mothers who interact with other women in the community tend to get more information on HIV and breastfeeding.

The study further looked at the relationship between knowledge and marital status which showed that the widowed and those who were single had equally higher knowledge (60%) on HIV and infant feeding. Currently being widowed is associated with increased risk of HIV and so they acquire more information so as to help

themselves and their children to live longer. Where as the single respondents also willing get information on HIV and infant feeding because of being at risk.

The study further revealed that 83% of mothers with children between 6-8 had high knowledge on HIV and infant feeding. This may be due to the fact that the bigger the number of children the mother has, the more often she has attended antenatal clinics. By so doing she receives more information on HIV and infant feeding issues.

The findings are in line with the study done by Bakaki, (2002) in Uganda on Lessons from Early Cessation of breastfeeding. This study revealed that 19 out of 37 mothers ranged from 20 –29, most were married with 2-3 children and were mostly housewives.

5.2 INFANT FEEDING PRACTICES

Understanding the practices related to breastfeeding and infant feeding alternatives, perceptions and stigma associated with not breastfeeding are crucial for the appropriate interventions to reduce postnatal transmission of HIV (WHO 2003). The Ministry of health in conjunction with WHO has recommended that infants whose mothers are HIV positive can only breastfeed exclusively or exclusively replacement feeding. Avoidance of breastfeeding by HIV infected women is recommended while mixed feeding is not recommended because it increases HIV transmission through breastfeeding.

- **Breastfeeding**

The study revealed that 62% of the respondents said that it was not good for HIV infected women to breastfeed while 38% proposed that breastfeeding was still the good alternative for infant feeding. The main reason given was that breastfeeding increases the chances of HIV transmission to the child from the mother. For those who did support breastfeeding, they said that despite their HIV status the children still need

breast milk for growth and that they were afraid of being seen by other people in the community. This entails that the emergence of HIV in Zambia, together with increasing efforts to test and counsel women on breast-feeding and HIV has exacerbated stigma. In Zambian culture where breastfeeding is the norm, people may stigmatize women who do not breastfeed as bad mothers. There is need for culturally sensitive training, counseling and community mobilization programs on infant feeding options.

According to the study done by Bond et al (2002) in Zambia on Stigma, HIVAIDS and PMTCT, it was revealed that not breastfeeding is seen as an indication of positive status and cause stigmatization, yet women who continue to breastfeed are accused of killing their babies. Stigmatization and the fear it provokes can prevent women from participating effectively in PMTCT. Another study done in South Africa by Beidel et al (2000), on Experiences of breastfeeding and Vulnerability among HIV positive women, revealed that breastfeeding was seen as a norm and some women suffered verbal and physical abuse for not breastfeeding. Women were not financially able to purchase infant formula. Women who do not breastfeed are blamed and abused by male family members. Women were told what to do in terms of infant feeding but not in decision-making.

Assessing how many respondents were breastfeeding, the study revealed that 46% were exclusively breastfeeding. Some decided that they would like to stop breastfeeding before 6 months or earlier while others had decided to breastfeed for as long as 2 years. Breastfeeding received maximum scores and it was considered more advantageous than formula, almost all women who opted to breastfeed agreed that breastfeeding is the best even for HIV positive mothers. Others cited the lack of money to sustain infant formula. A similar study done by Chitsike (2000) in Zimbabwe on infant feeding revealed that breastfeeding was cited by 84%, formula feed by 16%, expressed breast milk by 59%, home prepared milk 1%. 70% of these mothers said it was their decision, if money was not an issue, 59% would prefer formula 39% breastfeeding. Cultural factors limiting breastfeeding included suspicion of HIV infection by 30% and others such as medical reasons and work.

According to Piwoz, et al, (2001) exclusive breastfeeding followed by a rapid transition to exclusive replacement feeding may be one of the safest feeding options for HIV positive mothers. This practice provides infants with many important benefits of breastfeeding for at least few months of life while reducing postnatal exposure to HIV by limiting the duration of breastfeeding.

- **Infant feeding options**

The study further sought to identify the respondents' preferences of infant feeding options. The study revealed that 46% proposed exclusive breastfeeding, 36% commercial infant formula, 12% home prepared milk, 4% wet nursing and 2% were not sure about the effectiveness of the options. Assessing the factors that determine the choice of infant feeding, 84% said they would like to avoid MTCT through breastfeeding but infant formula is expensive, other responses were that people will notice they were HIV positive and others said they would like just to breastfeed. This shows that mothers may have knowledge but the social cultural and economic factors play a role in sustaining infant feeding.

In Zimbabwe, a similar study on Infant feeding, which was done by Chitsike (2000), also revealed that knowledge of HIV transmission through breast milk was very good. About 84% mothers cited breastfeeding, 16% infant formula, 5% expressed breast milk and 1% home prepared milk. 70% of these mothers said it was their decision, if money was not an issue, 59% would prefer formula 39% breastfeeding. Cultural factors limiting breastfeeding included suspicion of HIV infection by 30% and others such as medical reasons and work.

The above findings clearly indicate that HIV infected mothers have different understanding on infant feeding options. The mothers felt it was their decision to make a choice if only money was available. This shows that there are still barriers to decision making in the context of HIV and infant feeding such as economic factors,

stigma and cultural beliefs. Other factors include inadequate information on infant feeding, for example it was discovered that 84% were counseled. However, the health providers counseled only 54% of the respondents. The rest of the respondents were either counseled by the TBAs or no counseling was provided at all.

The study further assessed the age of respondents in relation to infant feeding practices. It was revealed that 67% of respondents aged 35-44 years were adhering to their choice of infant feeding practices, for example when asked to explore how they position and attach the baby to the breast, they were able to correctly explain. However 33% could not correctly explain their choice of infant feeding an indication that they were practicing unsafe infant feeding. This shows that the counselors had not given respondents accurate information on infant feeding options.

A study done by Paoli et al (2002), in Tanzania on Counselors perspective revealed that some counselors were not clear about the meaning of infant feeding and did not believe it was possible. Counselors lacked knowledge on how to advise mothers to feed an infant after cessation of breastfeeding. Counselors believed that a woman choosing not to breastfeed risked stigmatization of being identified as HIV positive and this contributed to women's decision to breastfeed. The financial burden of replacement feeding was also a barrier especially when a woman has not disclosed her status to the husband who controlled the money. Replacement feeding was seen as an option only for the educated women and economic means. They were also assumed to have the necessary knowledge and skills to safely carry their infant feeding choice. This shows that infant feeding was seriously compromised by the advice given and lack to cope with results and follow up. If not clearly explained the mother had no choice but to breastfeed.

In relation to marital status with infant feeding practices, it was discovered that the respondents who were divorced (75%) were not following infant feeding guidelines and hence adopting unsafe practices that would lead to transmission of HIV to the baby during infant feeding. This is due to the fact that as far as infant feeding decision

is concerned, there is need to involve the men for support. The divorced respondents had no support from their spouses and hence made it difficult for them to choose an infant feeding option and comply with it, this prompted them to practice mixed feeding.

On the other hand the respondents who were widowed 100%, were practicing safe infant feeding. This may be attributed to the fact that they had been knowledgeable on HIV and infant feeding and hence adopting good practices. Another reasons could be the experiences that they have had and so would want to prevent the babies from MTCT by acquiring more knowledge and adopting safe infant feeding practices.

All the respondents (100%) who had gone up to college level in their education attainment had adopted good infant feeding practices this was basically because they were able to assimilate issues of HIV/AIDS and that they could access information from other places for example the media, by reading different literature and many more.

The study also looked at the relationship between infant feeding practices and occupation. It was revealed that about 80% of the respondents who were formally employed, were able to adopt an infant feeding option of their choice and follow appropriate instructions. One of the challenges in deciding and sustaining infant feeding strategy is food security.

Most of the respondents with children 6-8 (43%) were adopted good infant feeding practices. Culturally multi-parous women usually practice exclusive breastfeeding as family planning method for the first six months. This puts them at an advantage of practicing good infant feeding.

Focusing on measures that should be put in place by the government to prevent mother to child transmission of HIV through breastfeeding, 56% of the respondents said that ARVs should be given both to the mother and the baby, 42% said that HIV

positive mothers should not breastfeed, 20% said health workers should intensify the IEC while 8% had nothing to say.

Assessing the views of mothers on infant feeding options, 24% said breastfeeding is still the best infant feeding method, 38% said these options are expensive and unavailable, 8% said that other people should not know about these options, 12% said there should be provision of free infant formula while 8% said the health workers should explain how these methods and others just kept quiet. This shows that mothers still had different understandings about the effectiveness of infant feeding options, most of them still thought breastfeeding is the best despite their HIV positive status. This may be attributed to poor client understanding the risks involved in breastfeeding both to the mother and child. However, early cessation of breastfeeding is one infant feeding option for HIV positive mothers who choose to breastfeed. According to Piwoz, et al, 2001, exclusive breastfeeding followed by a rapid transition to exclusive replacement feeding may be one of the safest feeding options for HIV positive mothers. This practice provides infants with many important benefits of breastfeeding for at least few months of life while reducing postnatal exposure to HIV by limiting the duration of breastfeeding.

This is in contrary to the study conducted in Botswana by the PMTCT advisory group (2001), on evaluation of infant feeding practices, the study revealed that 90% of HIV positive mothers decided to practice exclusive replacement feeding (using infant formula feeding) of their babies from birth, however the mothers received formula from the government. Over 90% of mothers who used formula gave it to their 0-6 months olds using a bottle and cleaned the bottle by boiling. When mothers ran out of infant formula, apparently there was a spillover effect on exclusive replacement feeding as well as exclusive breastfeeding for those HIV positive mothers who opted to practice exclusive breastfeeding. The study further revealed that cessation of breastfeeding was not a success story, most HIV positive mothers did not recall receiving advice about feeding after 6 months, the report also showed that there was poor knowledge on infant feeding counseling. Many did not feel confident in counseling on infant

feeding practices. This simply means that adequate knowledge should be equipped to the staff and mothers on infant feeding counseling.

5.3 IMPLICATIONS TO THE HEALTH CARE SYSTEM

The study has shown that knowledge and good practices on part of the mother on HIV and infant feeding will help to prevent MTCT during postnatal period. It has also been discovered that the higher the education level and formal occupation of the mother, the better adoption and practicing of infant feeding practices.

There is need therefore to intensify specific, individual oriented and directive health education so as to help the mother understand the implications of breastfeeding in HIV infection. Social-cultural beliefs and practices should be identified as well as socio-economic conditions should be identified during the counseling session so as to offer an effective service.

Another important finding is that despite more mothers being knowledgeable, they are not counseled on their choice of infant feeding. It can conclusively be said that health providers are more interested in HIV pre testing and not on post test counseling. Health workers should be educated on infant feeding counseling in order for them to understand better the views of women and their families. If possible there is need for counselors to demonstrated feeding methods to mothers antenatally.

5.4 CONCLUSION

This study was done to determine the knowledge and practices of HIV infected and breastfeeding mothers on infant feeding options in Ndola district

The study revealed that majority (94%) of respondents had heard about infant feeding options and most of these respondents got the information on infant feeding from the health workers. However most of the respondents were not counseled on the infant feeding option that they had chosen indicating unsafe feeding practices. For example,

Respondents who had one or no child had high knowledge (92%) but practicing bad or unsafe infant feeding (53%). On the other hand the study revealed that respondents

who were formally employed expressed high level of knowledge as well as good infant feeding.

5.5 RECOMMENDATIONS

Based on the findings of this study, the following recommendations have been Made:

5.5.2 HEALTH CENTERS

The health center in charge should:

- Support, strengthened breastfeeding and appropriate young child feeding practices especially for PMTCT program implementation, so that health workers feel comfortable counseling all mothers. This is required to minimize confusion about HIV and breastfeeding and to avoid erosion of mixed feeding in the general district population.
- Conduct VCT pre test counseling in groups or individually, post test counseling about infant feeding for HIV positive women must be conducted individually to ensure confidentiality, and to help women make the best decisions about how to care for, and safely feed their babies.
- Monitor and strengthen infant feeding trends and growth-monitoring programs for early identification of growth faltering.
- Introduce safe infant feeding working group at the health center to support mothers psychologically and physically.
- Explore ways to make replacement feeding safer for HIV positive mothers, including clean water, food hygiene and sanitation improvement.

5.5.1 NDOLA DISTRICT HEALTH OFFICE

Ndola district health management should:

- Orient all new nurses and midwives joining the district to the recommended WHO guidelines on counseling mothers on HIV and infant feeding. To help their clients make truly informed choices, health workers need adequate training to be able to understand and explain complex information about the relative risks

of different feeding methods including the increased transmission risk associated with breastfeeding and the increased mortality risk associated with replacement feeding.

- Supervise nurses and midwives regularly on infant feeding counseling.
- Strengthen the PMTCT district-working group meetings to discuss the gaps and find solutions together.
- Network with non-governmental organizations involved in the program for example ZPCT, Churches like catholic dioceses to provide support to these HIV infected mothers
- Find a focal person or counselor in each health center to coordinate the PMTCT services and especially infant feeding options.

5.5.3 MINISTRY OF HEALTH

The Ministry of health should:

- Adapt the United Nations guidelines on HIV and infant feeding to local settings, review national breastfeeding policies and update to ensure that language is accurate with respect to HIV and breastfeeding and is respectful of a woman's right to choose how to feed her baby.
- Sensitize and train health workers and others are in these new policies.
- Conduct formative research to adapt United Nations guidelines on infant feeding and HIV to local settings and to ascertain locally available replacement feeding options.
- Review and update preservice training curricula for nurses, midwives, social workers and all other medical/health personnel regarding MTCT issues and breastfeeding.
- Monitor media reporting on HIV, MTCT and breastfeeding issues and disseminate appropriate

5.5.4 FURTHER RESEARCH

Further research on infant feeding and HIV is required because many questions still remain unanswered. A study can be done to determine the effectiveness of infant feeding counseling by nurses\midwives.

5.5.5 LIMITATIONS OF THE STUDY

It was not possible to conduct the study on a large scale with a large sample size due to limited resources and time in which the study was to be completed and submitted to the University of Zambia, School of Medicine. This means that the study can not be generalized to a larger population of nursing.

There are few studies that have been done on the study in Zambia. This makes it difficult to make adequate comparisons with other local researchers and to determine the differences or similarities in the findings.

5.5.6 PLAN FOR DISSEMINATION OF FINDINGS

The study findings will be disseminated by printing and binding four (4) research project results. One (1) copy of research project results will go to Post Basic Nursing Department, one to the Medical library for reference, another copy will be sent to the sponsor, Ministry of Health and the other for the Investigator.

Executive summaries will be given to Ndola DHMT and the research sites and all health centers and hospitals involved. A workshop will be conducted for dissemination of findings.

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APPENDIX 1

THE UNIVERSITY OF ZAMBIA
SCHOOL OF MEDICINE
DEPARTMENT OF POST BASIC NURSING

INTERVIEW SCHEDULE:

FOR HIV POSITIVE, BREASTFEEDING MOTHERS ON INFANT FEEDING
OPTIONS

Serial #: _____
Date: _____
Duration of interview: _____
Location of interview: _____
Signature for consent: _____

INSTRUCTIONS FOR INTERVIEWEE

1. Please do not write your name on this questionnaire
2. Answer all questions
3. Confidentiality on information provided will be observed and will be utilized
for
the purpose of the study
4. Kindly tick the appropriate response

SECTION A: DEMOGRAPHIC DATA

1. How old were you on your last birthday?

- 1. 15 – 24 years []
- 2. 25 – 34 years []
- 3. 35 – 44 years []
- 4. 45 – 49 years []

2. What is your marital status?

- 1. Never married []
- 2. Married []
- 3. Divorced []
- 4. Widowed []
- 5. Separated []

3. What is your highest level of education?

- 1. None []
- 2. Primary []
- 3. Secondary []
- 4. Tertiary []
- 5. Other (specify)-----

4. What is your occupation?

- 1. None []
- 2. Housewife []
- 3. Other (specify)-----

5. What is your religious denomination?

- 1. None []
- 2. Catholic []
- 3. Protestant []
- 4. Jehovah witness []
- 5. Other (specify)-----

6. Where do you live?

- 1. Low density []
- 2. Medium density []
- 3. High density []

7. How many children do you have?

- 1. 0-1 []
- 2. 2-3 []
- 3. 4-5 []
- 4. 6-8 []
- 5. 9 and above []

8. What is your husband's educational level?

- 1. Primary []
- 2. Secondary []
- 3. College\University []
- 4. None []

9. If married, what is your husband's occupation? Please state-----

SECTION B: KNOWLEDGE

10. Have you ever heard of breastfeeding or infant feeding options?

- 1. Yes []
- 2. No []

11. If your answer is Yes, what was the source of your information?

- 1. Friends []
- 2. Relatives []
- 3. Health personnel []
- 4. Media []

5. Other (specify)-----

12. What do you understand by exclusive breastfeeding?-----

13. Do you think exclusive breastfeeding is good for your baby?

1. Yes []

2. No []

14. Give reasons for your answer in 13 above.-----

15. Have you ever heard of HIV transmission from mother to child?

1. Yes []

2. No []

16. If answer is Yes, when does transmission occur? -----

17. What factors contribute to the transmission of HIV from mother to child
during

Breastfeeding?-----

18. Is it always that every HIV positive mother will transmit HIV infection to
her child?

1. Yes []

2. No []

3. Not sure []

19. If the answer to number 18 is YES, what is the proportion of HIV positive mother having an HIV negative child?

- | | |
|------------|-----|
| 1. 1 to 10 | [] |
| 2. 2 to 10 | [] |
| 3. 3 to 10 | [] |
| 4. 4 to 10 | [] |
| 5. 5 to 10 | [] |

SECTION C: PRACTICES

20. In your opinion, is breastfeeding when a mother is HIV positive good?

- | | |
|--------|-----|
| 1. Yes | [] |
| 2. No | [] |

21. Give reasons to the answer in 20 above.-----

-

22. In your opinion, what is the best infant feeding option can mothers adopt?

- | | |
|------------------------------|-----|
| 1. Exclusive breastfeeding | [] |
| 2. Commercial infant formula | [] |
| 3. Home prepared milk | [] |
| 4. Wet nursing | [] |
| 5. None | [] |

23. Who was the source of information?

- | | |
|---------------------|-----|
| 1. Health personnel | [] |
| 2. Friends | [] |
| 3. Relatives | [] |
| 4. Media | [] |
| 5. Reading | [] |

24. When testing for HIV infection, were mothers counseled on infant feeding options?

1. Yes []

2. No []

25. What infant feeding option (s) did you decide to take up? and why? ----

26. Where you counseled on the same method of feeding?

1. Yes []

2. No []

27. If yes, by who?-----

28. Explain how feeding the baby using the same method is done.-----

29. What should be put in place to prevent HIV transmission from

Mother to child during breastfeeding? -----

30. Do you have anything to say about infant feeding options? -----

**Thank you very much for answering the question and for giving me your
time, may God bless you.**

APPENDIX 3: WORK PLAN

	TASK TO BE PERFORMED	DATE	PERSONNEL	PERSON S\DAY
1	Literature review	Continuous	Researcher	
2	Finalizing research proposal	8 th May to 14 th August, 2006	Researcher and research supervisor	80 days x 2
3	Data collection tool	15 th August to 20 th August, 2006	Researcher and research supervisor	7 days x2
4	Clearance from national ethics Committee and funding Authority			
5	Data collection Pilot study	21 st August, 2006	Researcher	1 day
6	Data analysis pilot	22 nd August, 2006	Researcher and research supervisor	1 day
7	Amendment tool	23 rd August, 2006	Researcher	1 day
8	Data collection Actual study	4 th September to 15 th September, 2006	Researcher	14 days
9	Report writing	9 th October to 10 th December, 2006	Researcher and research Supervisor	60 days x 2
10	Draft report	11 th December to 15 th January, 2007	Researcher and research supervisor	32 days x 2
11	Finalize report	16 th January to 20 th February, 2007	Researcher and research supervisor	35 days x 2
12	Monitoring and evaluation	Continuous	Researcher and research supervisor	

APPENDIX 4: STUDY BUDGET

	ITEM	UNIT COST IN KWACHA	QUANTITY	TOTAL
1	Field expenses			
	(a) Lunch allowance	50,000	10 days	1000,000
	(b) Transport allowance to Study areas	20,000	10 days	200,000
	Subtotal			1 200,000
2	Stationery			
	(a) Bond paper for typing	25,000	3 Realms	100,000
	(b) Notebook	5,000	1	5,000
	(c) Pens	700	5	35,000
	(d) Pencils	500	4	2,000
	(e) Sharpener	4,000	1	4,000
	(f) Eraser	4,000	1	4,000
	(g) Markers	3,000	3	9,000
	(l) Correction fluid	12,000	1	12,000
	(h) Flip chart	40,000	2	80,000
	(j) Staples	6,000	1	6,000
	Subtotal			247,000
3	Typing services			
	(a) Typing of questionnaire	2,000	6 pages	12,000
	(b) Photocopying of Questionnaire	200	6 pages x 55 copies	66,000
	c) Typing of research proposal	2,000	40 pages	80,000
	d) Typing of research proposal and report	2,000	90 pages	180,000
	e) Photocopying of research report			100,000
	f) Binding research report	25,000	5 copies	
	Subtotal			438,000
	Total			1, 885, 000
	Contingency fund 10%			188,500
				2,073,500

BUDGET JUSTIFICATION

Stationery

The realms of paper were required for printing and photocopying of the research proposal, questionnaires, draft and four final research reports.

The pens and pencils were used for writing while the correction fluid easer was used for correcting any mistakes. The flip chart was also used for drawing up the data master sheet as well as for dissemination of information.

Secretarial services

Secretarial services were required for typing and printing of questionnaire, K2, 000 per page. Binding of each research report costed K20, 000 a copy and four copies were required at the end of the project for submission to relevant authorities.

Field travel expenses

Lunch allowance had to be paid to the investigator while she collected data. 10% of the total budget was for the unseen circumstances and for possible inflation. She used this amount the whole day.

The University of Zambia
School of Medicine
Department of Post Basic Nursing
P.O. Box 50110
LUSAKA

21st August 2006.

The District Director of Health
Ndola District Health Office
NDOLA.

U.F.S: The Head
Department of Post Basic Nursing
Box 50110
LUSAKA

Dear Sir,

**RE: PERMISSION TO CARRY OUT A STUDY ON THE KNOWLEDGE AND
PRACTICES OF HIV POSITIVE MOTHERS ON BREASTFEEDING AND
INFANT FEEDING
OPTIONS**

I am a fourth year student at the University of Zambia, School of Medicine and Department of Post Basic Nursing, pursuing a Bachelor of Science Degree in Nursing. In partial fulfillment of this program, I am hereby requesting to conduct a study whose title is Knowledge and Practices of HIV positive mothers on breastfeeding and infant feeding options in Ndola district, in the following health centers: New Masala, Kabushi, Lubuto, Kawama and Bwafwano. This study is to be undertaken from 4th September to 22nd September, 2006.

Your favorable consideration of this request will be highly appreciated.

Yours faithfully,

Chewe Mable Musonda
Fourth Year Student BSC NRS (UNZA)