THE DEVELOPMENT OF GUIDELINES TO SUPPORT INFANT FEEDING
PRACTICES OF HIV-POSITIVE MOTHERS IN THE MBOMBELA MUNICIPALITY
OF MPUMALANGA PROVINCE

BY

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A THESIS
Submitted in fulfillment of the requirements for the

PhD IN NURSING SCIENCE

in the

FACULTY OF HEALTH SCIENCES School of Health Care Sciences Department
of Nursing Science

at the

SEFAKO MAKGATHO HEALTH SCIENCES UNIVERSITY

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DECEMBER 2017
DECLARATION

I, Evidence Thabisile Maziya, hereby declare that the work reflected in this thesis on the development of guidelines to support infant feeding practices of HIV-positive mothers in the Mbombela Municipality of Mpumalanga Province, is my own original work. It is submitted as a requirement for the PhD in Nursing Science at the Sefako Makgatho Health Sciences University. Neither the whole work nor any part of it has been or shall be submitted for another degree at any university or institution for higher education or assessment body. I further declare that all the sources cited or quoted are indicated and acknowledged by means of a comprehensive list of references.

__________________________________    ________________________
Evidence Thabisile Maziya      Date
DEDICATION

This thesis is dedicated to the trinity of the Almighty God whose divine wisdom, favour and power led me through the period of my study. I further dedicate it to my husband, Mr Sydney Maziya, my children, Nolwazi, Zweli, Samu, Banele and my grandchildren for their patience, encouragement, inspiration and assistance; my mother, my sisters and entire family at large for their understanding and continual support.
ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to:

Dr Lindiwe D. Madalane, my promoter without whose guidance, dedication and constructive criticism I would not have accomplished success;

Prof. MLM Sengane for guidance and support during the period of my study;

Prof. Sphiwe Madiba, whose invaluable contribution to my study played a pivotal role in my success;

Dr. J. Dippenaar for the invaluable contribution that she made in my study;

Prof. EJ. van Aswegen, for her leadership and support as head of the SMU Department of Nursing Science in which I completed my studies;

The staff of SMU Nursing Science Department for their assistance, endless words of encouragement and support;

Mr Patric Motiang, for invaluable library and other support;

The Department of Health, Mpumalanga Province for granting financial support and permission to conduct this study;

The staff of the community health facilities where the study was conducted;

The Principal and staff of Mpumalanga College of Nursing for all the support provided throughout my study.
Title: The development of guidelines to support infant feeding practices of HIV-positive mothers in the Mbombela Municipality of Mpumalanga province

The purpose of the study was to explore the experiences of HIV-positive mothers on their decisions about their choice of infant feeding practices and develop guidelines to support them on such choices. The study was conducted in three phases namely, focus group interviews for mothers, significant others and narratives from professional nurses; assessing support needed and available for mothers; and developing guidelines for providing support.

A qualitative, explorative and descriptive research approach was applied to explore and describe the experiences, to develop guidelines for support of the infant feeding phenomenon. The sample comprised of HIV-positive mothers and their significant others, and professional child health nurses. Two unstructured interview protocols and one narrative were used to collect data.

The findings of the study reflect the challenges with regard to insufficient support and specific information for infant feeding decisions, inability to manage and maintain infant feeding decisions, and interference thus creating an inability to make emancipated infant feeding decisions. The judgmental attitudes related to HIV infection and recommendations as a basis for the development of guidelines to restructure empowerment strategies for mothers, counsellors and child health professional nurses, were part of the findings.

The major contribution of this study is strengthening the integration of more specific infant feeding information in counselling and in the Nursing and Midwifery curriculum for prevention of mother-to-child transmission of HIV through breast milk.

Key words: awareness of social norms, emancipated decision-making empowerment, exclusive milk feeding flexible environment, guidelines development, HIV-positive mothers, infant feeding practices, personal knowledge, reflection, significant others, and support.
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LIST OF ABBREVIATIONS

HIV--------Human immunodeficiency virus
PMTCT---Prevention of Mother-To-Child transmission
EMTCT---Elimination of mother-to-child transmission
MTCT-----Mother-to-child transmission
EBF--------Exclusive breastfeeding
EFF--------Exclusive formula feeding
WHO------World Health Organisation
DoH-------Department of Health
NDoH-----National Department of Health
EDM------Emancipated decision making
BFHI------Baby-friendly hospital initiative
MFHI------Mother-friendly hospital initiative
UNICEF-United Nations Children’s Fund
UNFPA -United Nations Population Fund
CHC1 – KaBokweni CHC
CHC2 – Bhuga CHC
CHAPTER 1

ORIENTATION OF THE STUDY

1.1. INTRODUCTION AND BACKGROUND OF THE STUDY

Mothers that are diagnosed with human immune-deficiency virus (HIV) face a dilemma in choosing infant feeding practices that promote the elimination of HIV transmission to their infants. Socio-economic barriers such as unemployment and some cultural practices impede the mother’s ability to make independent, safe infant feeding choices as some promote mixed feeding (Mnyani, Tait, Armstrong, Blaauw, Chersich, Buchmann, Peters & McIntyre, 2017:1). Breastfeeding plays a pivotal role in advancing Post-2015 Sustainable Development goals, thus promoting child survival and development (UNICEF, 2015:4).

Transmission of HIV via breast milk compounds the dilemma of HIV-positive mothers in view of a global call for breastfeeding to improve child survival (Doherty, 2009:2323; UNICEF, 2012:2). Contradictory messages from the significant others, community and healthcare workers exacerbate the dilemma among HIV-positive mothers (Ellis, 2013:14). Breastfeeding exclusively for the first six months of life, as a recommended feeding method, has a significant effect in the reduction of mortality from diarrhea and pneumonia (UNICEF, 2012:3). Breastfeeding counselling has proven effective in improving exclusive breastfeeding rates, hence it should be encouraged (du Plessis, 2013:4). At every antenatal visit the HIV-positive mothers should be counselled on exclusive breastfeeding, including the risks of not breastfeeding (NDoH, 2013:41).

The significance of the global prevalence of HIV requires the engagement of mothers in infant feeding practices that eliminate Mother-to-Child-Transmission (MTCT) of HIV infection. Exclusive breastfeeding for the first six months of life up to 24 months is one example of optimal infant feeding practice ideal for the elimination of Mother-to-Child Transmission of HIV (NDoH, 2013:43; UNICEF, 2015:4). In view of the need to eliminate MTCT of HIV transmission, the World Health Organisation (WHO) developed guidelines on HIV and infant feeding. The
The aim of the guidelines was to assist the HIV-positive mothers to make independent decisions on the choice of infant feeding practices that eliminate HIV transmission (WHO, 2010a:26).

The South African National Prevention of Mother-to-Child-Transmission of HIV (PMTCT) also promotes, protects and supports exclusive breastfeeding for first six months of life up to 12 months (National Department of Health (NDoH), 2013:41). Inadequate knowledge of the benefits of breastfeeding among the population in South Africa retards progress on active promotion and support of exclusive breastfeeding as an infant feeding choice (UNICEF, 2014:9).

One of the decisions that the mother can make is to practice exclusive breastfeeding or exclusive formula feeding for the first six months of an infant's life to maximise HIV-free child survival (UNICEF, 2012:2; NDoH, 2013:42). The WHO (2010d:19) recommends some approaches that should be used in child healthcare delivery sites to eliminate HIV transmission in infant feeding practices as follows:

- Mothers who are HIV-positive should exclusively breastfeed for the first six months of life, only introducing complimentary feeds after six months (NDoH, 2011:1).
- They should continue breastfeeding for the first 12 months to two years of life and above, until a nutritionally adequate and safe diet without breast milk can be provided (UNICEF, 2015:4).
- Mothers who are HIV-positive and decide to stop breastfeeding should do so gradually within one month, not abruptly.
- If HIV-positive mothers decide not to, or to stop breastfeeding there should be safe adequate infant replacement feeds for normal growth and development.
- Specific conditions should be met for the use of formula as a replacement feed, namely:
  - Assured availability of safe water and sanitation in the household;
  - Ability to reliably provide sufficient infant formula and safely feed infants for the first six months of life;
- Ability to prepare feed in a clean environment, and frequently enough to be safe and pose no risk to infections;
- Ability to exclusively formula feed in the first six months;
- Family being supportive of this practice and the mother or care-giver can access comprehensive healthcare services (WHO, 2010d:31-39; NDoH, 2013:42).

In response to the WHO guidelines to infant feeding practices, the South African National policy and guidelines on prevention of MTCT of HIV were issued. The National policy stipulates that HIV-positive mothers should be counselled to discourage mixed feeding and be supported to make appropriate infant feeding choices (National Department of Health (NDoH), 2013:3 & 11).

Mixed feeding and prolonged breastfeeding in Africa seem to be culturally mandatory despite the adoption of exclusive breastfeeding by the National Health Authorities (Ellis, 2013:14). A study done in Malawi in 2009, on exclusive breastfeeding among HIV-positive mothers confirmed mixed feeding as a mandatory cultural practice. According to the 2009 Malawi study, social pressures forced mothers to introduce complementary feeds soon after birth (Ostergaard & Bula, 2010:219-220). Apart from social pressures, most women in rural communities do not have resources for replacement feeds (Bland, Rollins, Coovadia, Coutsoudis & Newell, & 2007: 292).

Exclusive breastfeeding is one of the critical factors to improve child survival especially in resource poor countries and it reduces infant mortality as well as MTCT of HIV (NDoH 2007:6; UNICEF, 2015:4). In order to improve child survival, in 2012 South Africa adopted exclusive breastfeeding as the method that should be implemented for the first six months of life for all infants, including infants born to HIV positive mothers (UNICEF, 2012:2; UNICEF, 2015:4). The expectation was that HIV-positive mothers are supported in all health facilities so that there is compliance with the chosen infant feeding method (NDoH, 2013:42). Exclusive breastfeeding rates show significant improvement since 2012 when there was also introduction of mentoring programmes (Henriques, 2015:10). In the event where breastfeeding is not possible, formula feeds may
only be provided on prescription by authorised health professionals for medical conditions in infants (NDOH, 2011:1).

Reports on studies done in Southern Africa on infant feeding decision-making and practices indicate that inadequate counselling and support contribute to mixed feeding of infants (Mnyani et al, 2017:2). These reports further state that family pressure, coercion from healthcare workers and poor socio-economic conditions impede the sustaining of exclusive breastfeeding (Bland et al, 2008:889; Ellis, 2013:14).

The choice of an infant feeding method should always consider the significance of eliminating the transmission of HIV infection. Support and counselling are imperative for informed and sustainable infant feeding decisions (UNICEF, 2015:5). The global strategy on infant and young child feeding echoes the need to support HIV-positive mothers to enable them to select and sustain appropriate feeding options (WHO, 2010c:14).

Evidence from South Africa reveals that formula feeding confers an increased risk of HIV transmission per death by 3-5 fold and it accounts for almost 12 per cent of all under five year olds deaths in 2011 (UNICEF, 2015:4; WHO, 2010c:2). Evidence revealed that HIV-positive mothers should receive adequate counselling and support on the criteria to choose a particular feeding method. The latter was revealed in a study done in Sweden where breastfeeding mothers received support from health-care workers who focused on breastfeeding techniques (Pajalic, 2014:66).

Doherty, Chopra, Nkonki, Jackson and Persson (2006:2424) report that healthcare workers and significant others interfere with mothers’ emancipated decision-making on infant feeding practices. According to the aforementioned authors, some mothers were forced by influential members in their families to choose a particular feeding method such as bottle feeding in view of their HIV status. Further, those mothers received inadequate to no support from health workers who had different infant feeding beliefs themselves such as formula versus exclusive breastfeeding (Tuthill, Butler, Pellowski, Mc Grath, Cusson, Gable & Fisher, 2017:1489).
In order to enhance support to HIV-positive mothers, standard messages on infant feeding options should be available for healthcare workers as main information sources, HIV counsellors and the community. Such messages could be in the form of guidelines on infant feeding practices mounted in each health facility to direct counselling and health education (Mnyani, 2017:2). In support of this notion a study done in Tanzania recommended that consistent and uniform infant feeding messages should be globally cascaded (Young, Israel-Ballard, Dantzer, Ngonyani, Nyambo, Ash & Chantry, 2010:2031-2032). Some women prefer individual as opposed to group counselling for freedom of expression and better understanding of infant feeding messages. Individual one-on-one counselling is ideal for freedom of expression and maintenance of privacy and confidentiality (Ostergaard & Bula, 2010:220).

It is reported that lack of understanding, poor communication and traditional practices lead to mixed feeding (Avert, 2016:2). The aforementioned report further stated that in Malawi in 2016, most mothers reported mixed feeding in the first six months of life. A number of reasons given for mixed feeding include traditional feeding practices, poor understanding of what exclusive breastfeeding involves and poor communication on reasons for exclusively breastfeeding (Avert, 2016:3).

In Tanzania in 2016, a comparison of performance between two hospitals regarding infant feeding options decisions found that mothers in one hospital were confident to exclusively breastfeed their infants. In another hospital in that country, mothers expressed confusion and uncertainty on how to best feed their infants (Avert, 2016:3).

1.2. OVERVIEW OF MPUMALANGA PROVINCE HEALTH SYSTEM

The Mpumalanga Province is situated in the Eastern part of South Africa and is divided into three health districts namely: Ehlanzeni, Nkangala and Gert Sibande. Ehlanzeni is the biggest district with five municipal areas, namely: Mbombela, Mjindi, Thaba-Chueu, Nkomazi and Bohlabela (Mpumalanga Department of Health, 2010:2). The estimated population size of Mpumalanga Province is 4 039 939 million, which is 7.4 per cent of South Africa’s total
population, and 66 per cent of the population in the province is rural inhabitants (Statistics South Africa, 2011:4). The mid-year population for 2016 was 4.3 million (Stats SA, 2016:302). According to the Mpumalanga Press Release of 2016, the recorded total Mpumalanga population was 4.4 million and Mpumalanga is thus the 4th smallest province in South Africa with regard to the population size (Stats SA, 2016:1).

The Mbombela Municipality has five hospitals of which two are level two (mainly providing Regional health services), and three are level one (mainly providing District health services); and it has thirty-two Primary Health Care (PHC) facilities. Of the thirty-two, six are Community Health Centres (CHCs) that render
twenty-four hour comprehensive health care services. The Mbombela municipality area is divided into South and North and table 1.1. depicts PHC facilities that are located in the area (Mpumalanga Provincial Department of Health, 2010:4).

Table 1.1: List of PHC facilities in Ehlanzeni Health District

<table>
<thead>
<tr>
<th>Mbombela South PHCs</th>
<th>Mbombela North PHCs</th>
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<tr>
<td>1. KaNyamazane CHC</td>
<td>1. Gutshwa 8hr</td>
</tr>
<tr>
<td>2. Matsulu CHC</td>
<td>2. Khumbula 8hr</td>
</tr>
<tr>
<td>3. Msogwaba 8hr</td>
<td>3. Makoko 8hr</td>
</tr>
<tr>
<td>4. Eziweni (Pienaar) 8hr</td>
<td>4. Legogote 8hr</td>
</tr>
<tr>
<td>5. Nkwalini (Matsulu C) 8hr</td>
<td>5. Jerusalem 8hr</td>
</tr>
<tr>
<td>6. Sibuyle (Pienaar) 8hr</td>
<td>6. Manzini 8hr</td>
</tr>
<tr>
<td>7. Luphisi 8hr</td>
<td>7. Mthimba 8hr</td>
</tr>
<tr>
<td>8. Thekwane 8hr</td>
<td>8. Sand River 8hr</td>
</tr>
<tr>
<td>9. Mpakeni 8hr</td>
<td>9. Shabalala 8hr</td>
</tr>
<tr>
<td>10. Zwelisha 8hr</td>
<td>10. Hazyview 8hr</td>
</tr>
<tr>
<td>11. Nelsville clinic</td>
<td>11. Skukuza 8hr</td>
</tr>
<tr>
<td>14. KaBokweni CHC</td>
<td></td>
</tr>
<tr>
<td>15. Bhuga CHC</td>
<td></td>
</tr>
<tr>
<td>16. Phola Nsikazi CHC</td>
<td></td>
</tr>
<tr>
<td>17. Clau-Clau 8hr</td>
<td></td>
</tr>
<tr>
<td>18. Dwaleni 8hr</td>
<td></td>
</tr>
<tr>
<td>19. Mbonisweni 8hr</td>
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</table>

The population size for Mbombela Municipality catchment areas is estimated at 81,731. Predominating languages in the region are SiSwati followed by Xitsonga (Mpumalanga Department of Health, 2010:1).

1.3. PROBLEM STATEMENT
According to the WHO guidelines (WHO, 2010a:31) Recommendation Number Two (2) states that mothers known to be HIV-positive should exclusively breastfeed for the first six months of life. Exclusive breastfeeding should only stop when the provision of a nutritionally adequate and safe diet without breast milk is possible (WHO, 2016:3). Exclusive breastfeeding has been adopted in South Africa as the infant feeding method for HIV-positive mothers (NDoH, 2012:14). It is therefore imperative for HIV-positive mothers to receive correct knowledge and support from the healthcare workers and significant others in order to make informed decisions.

Adherence to a chosen infant feeding method remains a challenge for the HIV-positive mothers. This could be attributed to the fact that neither exclusive breastfeeding nor exclusive formula feeding is a cultural norm in most African settings. Mixed breastfeeding is the common method hence a need to optimise infant feeding interventions becomes critical in order to improve child survival (Doherty, Choppa, Nkonki, Jackson & Greiner, 2006:90)

In a research study that was done in KwaZulu-Natal, Western Cape and Eastern Cape provinces in South Africa, in 2006, on the effect of the HIV epidemic on infant feeding in South Africa, it emerged that most mothers maintained exclusive feeding practices for a short period of time because of various constraints within their community health system. Their infant feeding practices were characterised by the following challenges, among others:

- Protecting their children yet faced with mixed messages, which made decision-making difficult, e.g. posters promoting breastfeeding and others promoting formula feeding within the same clinic. Amid such conflicting posters the clinic health workers told them to breastfeed because their infants grow well with breast milk.
- Healthcare workers seemingly have a greater influence on mothers’ initial infant-feeding choices e.g. some mothers felt forced by health workers to choose a particular feeding option because of their HIV status.
Family pressures e.g. family members pressurised them to introduce other fluids within a month of birth thus compelling them to mix feed. (Doherty et al, 2006:93; Zulliger, Abrams & Meyer, 2013:1553).

In a maternity unit of one district hospital in Mpumalanga Province in South Africa, the researcher observed and interacted with two discharged mothers regarding infant feeding practice. The aim of the interaction was to check on how much information they were given on infant feeding practices while in the hospital. The ultimate aim of checking the level of knowledge was to determine the need for guidelines to support the HIV-positive mothers in their infant feeding decisions.

The mothers indicated that there was scanty and non-specific information received from health personnel on infant feeding. The feeding options selected by mothers in that hospital were based on nurses’ information. The scanty, non-specific information and limited freedom for the mothers to make the best infant feeding choices increases the risk of HIV transmission to their infants. In view of the above and similar observations, the researcher was further prompted to explore the experiences of mothers and based on findings, develop guidelines to support mothers regarding feeding options and practices.

A baseline survey conducted by the Mpumalanga Initiative for Newborn and Child Care forum revealed the unavailability of management guidelines in all health facilities on infant feeding practices. The survey further revealed a poor quality of counselling and support on choice of infant feeding for the HIV-positive mothers (Mpumalanga DoH, 2010:2). It is evident that infant feeding guidelines aligned to the WHO (2010a) guidelines on HIV and infant feeding should be available in all healthcare facilities. The guidelines should be applied in child care service delivery to support HIV-positive mothers in the choice of infant feeding practices.

This study was conducted in order to develop guidelines for the support of HIV-positive mothers on infant feeding practices in the Mbombela Municipality of Mpumalanga Province. The study focuses on enhancing the mothers’
empowerment for emancipated decision-making on the choice of infant feeding practices to eliminate HIV transmission among infants.

1.4. PURPOSE OF THE STUDY

The study purpose is to explore the experiences of HIV-positive mothers on their decisions about the choices of infant feeding practices. It is also to develop guidelines to support infant feeding practices of HIV-positive mothers in the rural communities of the Mbombela Municipality of Mpumalanga Province.

1.5. OBJECTIVES OF THE STUDY

The objectives of the study were as follows:

PHASE 1:

Objective 1: To explore and describe the experiences of HIV-positive mothers regarding decisions on choices of infant feeding practices in the Mbombela Municipality of Mpumalanga Province.

Objective 2: To explore and describe the experiences of significant others about the decisions of the HIV-positive mothers on their choice of infant feeding practices in the Mbombela Municipality of Mpumalanga Province.

Objective 3: To explore and describe the experiences of professional nurses regarding the decisions of the HIV-positive mothers on their choice of infant feeding practices in the Mbombela Municipality of Mpumalanga Province.

PHASE 2:

Objective 4: To document the kind of support required by the HIV-positive mothers regarding their choices of infant feeding practices in the Mbombela Municipality of Mpumalanga Province.

PHASE 3:
**Objective 5:** To develop guidelines to support HIV-positive mothers to make emancipated decisions about the choices of infant feeding practices in the Mbombela Municipality of Mpumalanga Province.

### 1.6. RESEARCH QUESTIONS

The following were the research questions:

- What are the experiences of HIV-positive mothers regarding their decision-making on the choice of infant feeding practices in the Mbombela Municipality of Mpumalanga Province?
- What are the experiences of the significant others regarding the choice of infant feeding practices of HIV-positive mothers in the Mbombela Municipality of Mpumalanga Province?
- What are the experiences of professional nurses regarding the decisions of the HIV-positive mothers on their choices of infant feeding practices in the Mbombela Municipality of Mpumalanga Province?
- How can the guidelines for the support of HIV-positive mothers with regards to emancipated decisions on the choices of infant feeding practices in the Mbombela Municipality of Mpumalanga Province be developed?

### 1.7. SIGNIFICANCE OF THE STUDY

If implemented, the guidelines might assist the Mpumalanga Department of Health to comply with the National Policy for Infant and Young Child Feeding provision. The National Policy that says that the community health workers within the Primary Health Care re-engineering process will play a significant role in supporting mothers to exclusively breastfeed and continue breastfeeding for two years or more (du Plessis, 2013:4). The presence and utilisation of specific evidence-based local guidelines in PHC facilities might respond to the aforementioned statement.
The negative image about the child healthcare units in healthcare facilities may change to a positive one if the developed guidelines are implemented. Furthermore, the healthcare workers in the health facilities might be supported through the existence and implementation of the developed guidelines. Additionally, HIV-positive mothers as primary beneficiaries of the developed guidelines, may be empowered in making decisions regarding their choices in infant feeding practices. Consequently, elimination of HIV transmission through inappropriate feeding choices among infants may be reduced.

Section 16 (1)(b) of the Constitution of the Republic of South Africa (South Africa, 1996:2), stipulates that everyone has a right to freedom of expression. In line with the Constitution, the HIV-positive mothers should be allowed freedom to choose the best infant feeding method and practices. Freedom to choose could be enhanced by providing the HIV-positive mothers with relevant information on available infant feeding methods as outlined in the developed guidelines.

1.8. THEORETICAL FRAMEWORK

Anfara and Mertz (2008:1) and Creswell (2014:110) state that it is important for researchers to relate their studies to a theoretical or conceptual framework as it informs many aspects of the research design. The Wittmann-Price Theory of Emancipated Decision Making (EDM) in Women’s health care forms the framework for this study. The Wittmann-Price Theory of EDM affirms the patient-centered paradigm and encourages the critique of social norms. It further takes cognisance of the fact that knowledge development basically occurs within a social context (Wittman-Price & Bhattacharya, 2008:225-226).

The Wittmann-Price Theory proposes that the attributes for emancipative decision-making namely: awareness of social norms; flexible environment; empowerment; personal knowledge and reflection, determine if decisions are free and authentic (Wittman-Price & Bhattacharya, 2008:225-226). The more empowered the HIV-positive mothers are the more emancipated they might be to make independent decisions. The professional nurses play a vital role in
empowering HIV-positive mothers thus enabling them to make emancipative decisions (Adib-Hajbaghery, 2005:6; Chinn & Kramer, 2011:90).

Based on the Wittmann-Price theory, the following assumptions are made for the empowerment of HIV-positive women in the context of this study:

- The environment where a mother resides influences her decisions pertaining to infant feeding practices;
- The mother ideally should have adequate information and freedom from pressure of social norms and stigmatisation on infant feeding options in order to make sustainable decisions;
- The HIV-positive mothers should be free to choose a method of infant feeding that they believe is the best;
- The environment in which informed decisions are made should be flexible enough to allow change if necessary. The context of this nature should yield satisfaction with the mother’s decision and its outcome.

The attributes of the Wittmann-Price theory form the framework for development of a protocol for enquiry to investigate HIV-positive mother’s free choice in infant feeding patterns (Wittman-Price & Bhattacharya, 2008:225-226). In the context of this study the attributes of Wittmann-Price theory for emancipated decision-making were applied during the exploring of experiences of HIV-positive mothers. Each probing question was directed towards eliciting each attribute from the responses of the participants, as discussed in chapter 4.

1.9. OPERATIONAL DEFINITIONS

Infant feeding practices

These are behaviours which involve the provision of nutrition to infants and it includes breastfeeding, formula feeding, solid food intake and feeding infants with other complementary foods and liquids (UNICEF, 2016:vi). The appropriate feeding patterns improve the nutritional status and improve child survival. Infants of HIV-positive mothers have a high risk of MTCT of HIV infection hence a need
to engage in appropriate infant feeding practices (Katepa-Bwalya, Mukonka, Kankasa, Masaninga, Babaniyi & Siziya, 2015: 10). While breastfeeding is regarded as a simple method of feeding some counsellors remain uncertain about the correct practice for HIV-positive mothers (WHO, 2010d:1).

In this study infant feeding practices refer to the patterns of infant feeding that are chosen and used by the HIV-positive mothers and infants’ attendants. Exclusive breastfeeding, exclusive formula feeding, mixed feeding and complementary feeds are examples of infant feeding practices. The main focus on infant feeding among HIV-positive mothers is the elimination of MTCT of HIV infections.

**Exclusive breastfeeding**

Exclusive breastfeeding is a feeding pattern in which a newborn infant receives breast milk only and receives no food or drink except medical prescriptions drops and various syrups (Thairu, 2009:99; Bland et al., 2008:885). The UNICEF (2016: vi) defines exclusive breastfeeding as a feeding pattern in which an infant receives only breast milk without any other liquids or solids. Breastfeeding is a global feeding method of infants that is recommended by the Health Sector by virtue of its high nutritional value to growing infants (Doherty, 2010:13).

The protective effect during the first six months of life causes the breast milk to reduce the risk of MTCT of HIV (Ostergaard & Bula, 2010:214). In the context of this study exclusive breastfeeding means a feeding practice in which an infant receives breast milk feeds only, and no water or any other feed is given from birth until six months of life. Only drops and syrups for vitamins and minerals or prescribed medicines are permitted for the infant if necessary.

**Exclusive formula feeding**

Exclusive formula feeding refers to a feeding pattern in which a newborn infant receives formula feed or a breast milk substitute instead of breast milk. The term replacement feed is used interchangeably with formula feed. In exclusive
formula feeding, the infant is given formula feed only and receives no food or drink except prescribed medical treatment, drops and syrups (Thairu, 2009:99). The UNICEF (2016:vi) defines replacement feeding as that in which an infant who is not receiving any breast milk is given a diet that has all the nutrients that children need until they can fully eat family food. In this study exclusive formula feeding means that the infant is fed on formula or substitutes of breast milk only with no breast milk. Only drops and syrups for vitamins and minerals or prescribed medicines are permitted.

**Mixed feeding**

Mixed feeding refers to a feeding pattern where a newborn infant receives a combination of breast milk, formula feed, any other solid or semi-solid feeds and liquids (Young et al, 2010:2027). Mixed feeding is further defined as the practice of simultaneously feeding the infant younger than six months on breast milk and any other liquid or food including water and other types of milk or solids (UNICEF, 2016:vii). Various factors such as familial pressures and the use of supplemental herbal preparations also lead to mixed feeding (Maru, Datong, Selleng, Mang, Inyang, Ajene, Guyit, and Charura & Abimiku, 2009:1117). In the context of this study mixed feeding means feeding practice in which the newborn infant is fed on the combination of breast milk, milk formula and any other solid, semi-solid feeds and liquids.

**Significant others**

A significant other is usually a family member, spouse, child, co-workers, friend or lover, who serves as a role model or whose acceptance and approval is sought (Ellis, 2013:14). Collins (2010:1) defines significant other as a spouse or love whilst Firmament (2009:1) defines significant other as a partner in a relationship, a mate, girl or boy friend and a companion. In this study the significant others are people who are closely related to the individual and have an influence on the behaviour and attitude of those people. This person knows the behaviour and
attitudes of the HIV-positive mother, stays with her and therefore should have the required information regarding infant feeding practices.

1.10 RESEARCH DESIGN

A qualitative, explorative and descriptive design is used in this study to explore and describe the experiences of HIV-positive mothers in the context of emancipated decision-making on infant feeding practices in the Mbombela Municipality of Mpumalanga Province. The explorative design is used to obtain the experiences of the HIV-positive mothers, their significant others and professional nurses on the chosen infant feeding practices, since qualitative research is exploratory (Creswell 2014:151).

The descriptive design enabled the researcher to describe the identified experiences of HIV-positive mothers, professional nurses and significant others on infant feeding practices (de Vos et al, 2011:95; Creswell, 2014:151). An interview guide based on the Wittmann-Price theory (2008) sub-concepts was used for data collection. The Wittmann-Price sub-concepts include awareness of social norms, flexible environment, empowerment, personal knowledge and reflection (Wittmann-Price & Bharacharya, 2008:226). The data analysis culminated in the development of guidelines to support infant feeding practices of HIV-positive mothers in the Mbombela Municipality of Mpumalanga Province. The research design is described in detail in chapter 3.

1.11. RESEARCH METHODOLOGY

Research methodology refers to a branch of logic that deals with the general principles of the formation of knowledge (Thesaurus, 2016:1). Collins (2014:1) also defines methodology as a system of methods, procedures, rules or principles that are used in a given discipline. The research method is a systematic approach to the research process. It includes planning, structuring and execution of the plan, population, sampling, data collection and analysis (de Vos et al., 2011: 110; Burns & Grove, 2009:7).
1.11.1. Population

The population is the entire group of persons, individuals or objects in the universe who possess specific characteristics that are of interest to the researcher (Brink, 2006:123; de Vos, Strydom, Fouche & Delport, 2011:223). In this study the population includes all HIV-positive mothers who had delivered and were nursing infants in the Mbombela sub-district of Mpumalanga Province between April and July 2014 and also in June 2017. The second population in this study was the significant others to HIV-positive mothers while the third population was the professional nurses working for six months or more in the selected CHCs namely CHC1 and CHC2.

1.11.2. Recruitment of Participants

The Operational Managers at the CHCs give guidance on ideal days for child health services and prevention of Mother-To-Child Transmission of HIV infection. The researcher approached HIV-positive mothers individually at the CHC1 and CHC2 Community Health Centres during their clinic visits for the child health services. Their HIV status was detected as reflected in page seven of the Road to Health Booklets that are currently in use in all the public health facilities (See Annexure J). The booklet also indicates whether the mother has disclosed her HIV-positive status or not. Such disclosure is in accordance with the prevention of Mother-To-Child Transmission (PMTCT) of HIV treatment guidelines of March 2013. The guidelines state that:

> Information on a patient's HIV status, PMTCT or ART regimen, and CD4 cell count should be shared between healthcare personnel at all levels of the health service, while respecting the confidentiality of women and children. This is called shared confidentiality amongst healthcare workers, and is essential for maintaining continuity of care among women and infants (Department of Health, 2013:12).
Availability of and access to the mothers’ HIV status in the Road to Health Booklet (RTHB) enables the Child Health Nurse to direct each HIV-positive mothers to the researcher. This process occurred without notice of the other HIV-positive mothers for confidentiality of the HIV-positive mothers. The researcher then sampled all the HIV-positive mothers from which she recruited the study sample. The significant others to whom the HIV-positive mothers disclosed their HIV statuses were selected for the study in consultation with the HIV-positive mothers.

To recruit the significant others the researcher used the telephonic contact details provided by HIV-positive mothers to contact and sample them for the study. The significant others who met the inclusion criteria were recruited and invited for focus group discussions. The venue agreed upon with the significant others for the interview was each of the CHCs according to their geographical positions. Upon agreeing to take part in the study, arrangements for the dates for focus group interviews were made.

For recruitment of professional nurses, the researcher approached the professional nurses who were working in a child health clinic according to the list obtained from the Operational Manager. The exclusion and inclusion criteria were used to determine eligibility. The researcher explained the research topic, purpose and expectations from them then requested the eligible ones, individually, to take part in the study. Upon agreeing, arrangements for narratives were made with each of them in both CHCs with regards to the date of issuing and collecting the narratives.

1.11.3. Sampling

Sampling is the process of selecting a group of people, events, behaviours or other elements that represent the population of interest in a study (Kumar, 2014:1). In non-probability sampling not every element of the population has an equal chance of being selected for the study (Burns & Grove, 2009:353).
Purposive sampling is an example of a non-probability sampling design that ensures getting a sample that will provide rich data (Burns & Grove, 2009:353). Purposive sampling involves a conscious selection of subjects containing the most characteristic attributes of the population of interest (de Vos et al, 2011:392). The population of interest in this study is HIV-positive mothers with their significant others and the professional nurses providing child health services.

A purposive sampling approach was used to select the HIV-positive mothers, their significant others and the professional nurses whom were involved in child health services for at least six months at the two CHCs in the Mbombela sub-district. Sampling happened during the months of April to July 2014 following the approval to conduct research from the Manager of Ehlanzeni Health District. The purposive sampling of one set of HIV-positive mothers, their significant others and Professional Nurses was repeated in June 2017 to determine if there was new different emerging data. The second set of data collected was significant to identify any new insights because of the changes in infant feeding guidelines since 2014, which could impact on the data collected then..

1.11.4. Sample

A sample is a representative part of a single item from a larger whole or group, especially when presented for inspection or shown as evidence (Webster, 2015:1). Sampling in qualitative research is based on data saturation not the size (Burns & Grove, 2009:361), and smaller groups of four to six people are ideal. According to Charmaz (2006) in Creswell (2014:239) saturation implies that when gathering new data there are no more sparks or new insights revealed.

In this study the researcher ceased recruiting when saturation was reached hence a total of seventeen was sampled from both CHCs. They totalled seven groups: two groups of four participants, both from CHC1; two groups of three participants, one group was from CHC2; and three groups of one participant, two of which were from CHC2.
The sample of significant others from both CHCs was eight participants comprising of two mothers of HIV-positive mothers, one mother-in-law, two sisters, two spouses and one aunt in different groups. They totalled three groups, two from CHC1 and one from CHC2. The sample of professional nurses had eleven; of them six from CHC1 and five from CHC2. The researcher was guided by saturation to reach the numbers for focus group interviews in which the data collected revealed no new insights (Creswell, 2014, p.239). The number of professional nurses was based on those who were available and willing to participate in the study.

1.11.4.1. Inclusion Criteria:

- HIV-positive mothers with live infants, living in extended families who have disclosed their HIV-positive status to their significant others and are willing to participate in the study.
- Any significant other who lives with the HIV-positive mother, is willing to participate in the study and provides telephonic verbal consent to participate in the study.
- Professional nurses who have worked in the child health clinic for six months or longer and are willing to take part in the study.

1.11.4.2. Exclusion Criteria:

- The HIV-positive mothers who are not ready to disclose their HIV status.
- Any significant other who is not willing, does not stay with the HIV-positive mother and those who do not give consent to participate.
- Professional nurses who do not work or have worked for less than six months in child health clinic.

1.11.5. Pilot Testing

Pilot testing means finding out if the survey, key interview guide or observation form will work in the real world and it can be conducted in qualitative, quantitative and mixed research methods (Impact, 2011:1; Janghorban, Roudsari, Taghipour, 2013:4). The pilot testing is an important tool which is used
to measure if an interview schedule will yield the intended study information. It determines the need to modify the methodology for use in the main study based on the outcome of the pilot testing (de Vos et al, 2011:484). Pilot testing is viewed by Jonghorban et al, (2013:5) as a tool for contextual management of data and for enhancement of research vigour and validity. Pilot testing entails conducting the study on a small scale in a setting similar to that of the main study using comparable participants to the main study, and then revise the tool if necessary (Burns & Grove, 2009:44; Creswell, 2014:32). The data from the pilot study may be included in the main study according to the report on the study conducted in United Kingdom (Ismail, Kinchin & Edwards, 2017:6).

Following the approval of the study by the University Medical Research Ethics Committee (Annexure H), the researcher conducted the pilot study in CHC1 in the Mbombela Municipality in Ehlanzeni District. One focus group discussion with four HIV-positive mothers was conducted at the CHC1. A focus group interview with two significant others was conducted in the home of one of the HIV-positive mothers as agreed with her. One narrative interview was conducted with one professional nurse at CHC1 to accomplish pilot testing. Based on the results of the pilot testing the probing questions in the interview schedule for HIV-positive mothers were modified for clarity. The data from the pilot study was included in the data analysis and interpretation for this study.

1.12. RESEARCH SETTING
The study setting is defined as the site in which a study is conducted, which can be physical, cultural or social and description of the type of setting and the number of study sites is important in any study to enhance understanding of the study context (Creswell, 2014:45). The setting for this study was CHC1 and CHC2 located in the Mbombela Municipality in Mpumalanga Province. The two CHCs provide 24 hours maternal and child health Care services, which include the elimination of MTCT of HIV infection.
1.13. DATA COLLECTION

Data collection is a systematic approach used in gathering and measuring information from a variety of sources to address the questions being asked in the study, to set boundaries for the study and protocols for recording information (Creswell & Plano Clark, 2011:171; Creswell, 2014:239). The researcher first requested from Managers at CHCs a quiet, comfortable and well ventilated room for focus group discussions. An unstructured interview schedule was used, based on the attributes of Wittmann-Price Theory of Emancipated Decision Making, to collect data from the HIV-positive mothers and their significant others. The Wittmann-Price Theory attributes are: social norms, flexible environment for decision-making, empowerment, personal knowledge and reflection (Wittmann-Price & Bhattacharya, 2008:2472).

For HIV-positive mothers and their significant others:

Briefing to participants entailed explaining that focus group interviews will focus on infant feeding practices used or chosen by them. The HIV-positive mothers were also informed about the time allocation and that it might last between 40 to 60 minutes per group. Furthermore, all HIV-positive mothers were informed that each one would receive an equal opportunity to speak in the group and that all their views were important.

A central question was constructed to direct the focus group interviews, one for HIV-positive mothers, and another for significant others. Probing was used throughout to guide the focus group interviews for both the HIV-positive mothers and their significant others (see Annexure A). The audio-tape recorder was used to capture the focus group interviews so that no data would be lost in the case of interruptions. Field notes were also taken in order to achieve triangulation. For focus group interviews the participants, HIV-positive mothers and their significant others, were asked to give permission for the use of audio-tape recorders after assuring them of the maintenance of confidentiality, and they agreed.

A research assistant, with sufficient knowledge in group facilitation and in the content of the topic, was utilised to assist with the discussions and interviews (de
Vos, 2011:368). The researcher captured field notes, non-verbal cues and handled logistics. Logistics included the signing of consent forms for all participants and setting up the audio-recorder in readiness for use in each focus group interview session.

For Professional Nurses:

The researcher handed the narratives and blank scripts to each participant in each of the selected Community Health Centres for them to respond to instructions in writing within about 20 to 40 minutes. Each script provided space for the professional nurses to record essential data such as: the date, time, place of interview and their length of exposure to child health services. The details on the narratives are reflected on Annexure B.

1.13.1 Biographical Data for Each Participant

The biographical data for each participant was collected to understand their credentials. Such credentials included age, parity, ethnic group, level of education and employment status. Information regarding relatives staying with HIV-positive mothers was also asked as part of biographical data. The focus group interviews with HIV-positive mothers and significant others were conducted in SiSwati as the language understood by those specific participants. For professional nurses English was used for gathering narratives as all participants were conversant in that language.

1.13.2. Focus Group Interviews and narratives

According to de Vos et al., (2011:360) focus groups are carefully planned group interviews in which participants with common characteristics engage in a focused group discussion. The group is called focused because participants, six to eight per group, collectively share their views, experiences, perceptions and
Focus groups usually include six to ten people, but smaller groups of four to six people are preferable for experienced participants in the study topic (Burns & Grove, 2009, :513; de Vos et al, 2011:366; Creswell, 2014:240). The number of focus groups per study depends on the aims or purpose of the study and various opinions exist around this aspect. Kingry et al. (1990) in de Vos et al (2011:367) suggest a rule of thumb of four focus groups for conducting interviews. Various factors such as, research questions and the manner in which the discussion is structured, and the final turnout of recruits, determine the number of participants per group. The more details a researcher requires the larger the group size will be (de Vos et al, 2011:366).

In the context of this study a total of seven focus group interviews were conducted with HIV-positive mothers and three focus group interviews were conducted with significant others. The focus groups comprised of varied number of participants according to the numbers who responded by availing themselves after recruitment. For HIV-positive mothers two groups had four participants each, both from CHC1; two groups had three participants each, one of the latter two groups was from Bhuga CHC; and three groups had one participant each, two of which were from CHC2. A total of seventeen HIV-positive mothers participated in focus group interviews.

Out of the fifteen participants recruited per group for HIV-positive mothers, only one to four turned up despite follow-up by cell phones to remind them, right up to the starting time of interviews. In the case of focus groups which had only one participant, all the recruited mothers had confirmed their availability to participate the evening before, yet did not arrive for the start of the interviews. The researcher waited with with the single participant in vain for more than fifteen minutes after the scheduled time for commencing interviews. In view of the
importance of each mother’s experiences for the study’s objectives, one participant had to be interviewed alone instead of sending her away.

In the case of the significant others, up to ten participants were recruited per group with follow-up phone communication as a reminder. Three focus group interviews were conducted, two of which were at CHC1. Two focus groups had three participants and one had two participants. Similar challenges of participants confirming their availability but not arriving for interviews for HIV-positive mothers were encountered with significant others despite cell phone reminders, even on the interview day. A total of eight significant others participated in focus group interviews.

Charmaz (2006) in Creswell (2014:239) states that one stops collecting data when the categories or themes are saturated. Saturation means that when gathering data new data there are no more sparks or new insights or it does not reveal new properties, hence it becomes fruitless to continue collecting data. The same applied in this study in that the researcher discontinued collecting data when there were no new insights elicited thus resulting in the number of focus groups as explained above.

**HIV-positive mothers, their significant others and professional nurses**

An unstructured focus group interview schedule with open-ended questions and in-depth interviews was used to collect data from the HIV-positive mothers and their significant others. Two central questions, one for HIV-positive mothers and another for their significant others were utilised to guide the interview. The probing questions were asked based on the central questions to direct focus group discussion and elicit views and opinions of participants (Creswell & Plano Clark, 2011:290; Creswell, 2014:240) (see Annexure A). An audio-tape recorder was used to capture interviews so that no data would be lost in the case of interruptions. Field notes were made for data triangulation.

A research assistant, with sufficient knowledge in group facilitation and in the content of the topic, was utilised to assist with the interviews through facilitation of focus group discussion. The researcher engaged in capturing field notes and
non-verbal cues, handling logistics during the interviews, and doing analysis of the group after the interviews (de Vos et al, 2011:368).

The narratives were gathered from the eleven professional nurses using scripts with an unstructured interview guide for data triangulation. A total of eleven professional nurses, six from CHC1 and five from CHC2 participated in completing the scripts handed to them for the narratives. The blank scripts for narratives (see Annexure B) were handed to them to respond to in writing for about 20-40 minutes. The narrative scripts provided space for recording essential data about the date, time and place of the interview (Creswell & Plano Clark, 2011:17). The information gathered from the narratives is detailed in Annexure B.

1.14. DATA ANALYSIS

Qualitative data analysis consists mainly of a data coding process in which the gathered data from focus group interviews and narratives is set apart, grouped into codes which are further grouped into themes (Creswell, 2014:245). The themes become interrelated to bring about some answers to the research questions (Creswell & Plano Clark, 2011, :208). In this study, data from the focus group interviews were transcribed after each interaction with the HIV-positive mothers and the significant others, whilst data from narratives were also transcribed after collection of each script from the participants.

Since the main data was that of the HIV-positive mothers, data from the significant others and narratives from professional nurses were coded then combined with the main data. Data were analysed following Creswell’s steps of data analysis as described by Marshall and Rossman in de Vos et al (2011: 403) after which a conceptual framework was formulated. The data analysis steps hereunder listed are discussed in detail in chapter 3, Research Methodology.

- Planning for recording of data
- Data collection and preliminary analysis
- Managing the data
- Reading and writing memos
• Generating categories and coding the data
• Testing the emergent understandings and searching for alternative explanations;
• Interpreting and developing typologies
• Presenting the data (de Vos et al, 2011:403-404).

1.15. BIAS

Bias is a deviant state in research studies that results in distorting the findings in research studies (Burns & Grove, 2009:220). It may arise from the researcher, measurement tools, participants and the data. The researcher should identify and eliminate or reduce factors that contribute to bias in the study. In this study the researcher eliminated bias by using focus group interviews, field notes taken during the interviews and narratives as data collection methods. Triangulation was also done and it is discussed in chapter 3.

1.16. TRUSTWORTHINESS

The researcher has a responsibility to indicate how the research study will yield believable, trustworthy and or valid evidence on the data and report (Henning et al, 2010:146; Creswell, 2014:132). There are four criteria that a researcher may use to assess trustworthiness and thus quality in qualitative research studies. Such criteria reflect the actual, accurate, real value of the research and enables the researcher to make reasonable conclusions about believability of the research findings (de Vos et al, 2011:419). The criteria for trustworthiness that were followed in this study are as follows:

Credibility/Authenticity: Using prolonged engagement, the researcher spent the first 15 minutes before data collection engaging participants into general conversation to ease any tension. This engagement helped to build trust and establish rapport, giving participants adequate time to express their views during the interview session thus enhancing credibility (Heather, 2015:29). The researcher further observed the participants’ reaction as they responded to interview questions to elicit any significant non-verbal responses (de Vos et al,
Forty to sixty minutes were spent on focus group discussions to allow for full expression of required data, and twenty to forty minutes was spent on written narratives.

**Authenticity** was maintained by expressing the verbatim responses of participants during transcription. It was further maintained as they portrayed their behaviour, as observed during interviews. Such behaviour included sighing and facial gestures that accompanied their responses, as reflected in the transcripts.

**Data triangulation** was done through the use of focus group discussions, field notes and narratives to collect data and talking to all participants at the end, as the need arose, to give more value to the research (Burns & Grove, 2009:231; de Vos et al, 2011:420). Triangulation was further enhanced by combining the focus group interview data with the field notes data in formulating themes, categories and sub-categories (Heather, 2015:30).

**Dependability:** Using an inquiry audit in which field notes and audio-tape transcripts were given to an expert to scrutinise and verify if the data truly reflects the experiences and views of participants. The researcher also ensured that the research process was logical and recorded all the data collected through interviews and filed notes (de Vos et al, 2011:420). The other strategies used for dependability entailed detailed description of the methods that were utilised in gathering and analysing data. Such strategies ensured that the research study could be repeated in a similar context with similar results (Heather, 2015:73).

**Confirmability:** Pilot testing was done to test if the interview guide would work in the real world (Impact, 2011:1). Pilot testing assisted to assess whether the interview schedule would yield the intended study information to determine the need to modify the methodology for use in the main study (de Vos et al, 2011:484). Confirmability of the data collection and analysis was ensured by triangulation in which focus group interviews, field notes and narratives were used (Heather, 2015:73).
Transferability: Using a thick description of the research setting and processes, the participants’ characteristics were fully described. The information on how and where they were selected was described to show representativeness of population in order to add value and richness of data. The triangulation of data sources such as use of focus group interviews from the HIV-positive mothers and their significant others enhanced transferability (de Vos et al, 2011:420). The results of the focus group interviews and the developed guidelines are provided in the research report to allow the reader to consider transferability of the guidelines to another setting (Heather, 2015:58).

1.17. ETHICAL CONSIDERATIONS

Ethical consideration refers to all measures taken to protect the rights, anonymity and maintain confidentiality of the participants in the research studies (Burns & Grove, 2009:611). Ethical principles of respect for autonomy, non-maleficence, beneficence and justice were complied with in this entire research study (Heather, 2015:46). The autonomy of the study participants was respected by inviting them and describing the study topic to them in order to obtain an informed consent. Autonomy of participants was also respected by furnishing them with contact details of the researcher for further communication as needed.

This study was approved by the University of Limpopo’s Medical Research Committee (MREC) which is now called Sefako Makgatho Health Sciences University (SMU) Medical Research Committee (MREC) (Annexure H). Further permission was obtained from the Mpumalanga Department of Health Provincial Research Committee (Annexure I).

In order to show respect to the confidentiality of the participants, the use of codes instead of real names was done to ensure anonymity as well as use of codes or pseudonyms for facilities used as study sites (Sanjari, Bahramnezhad & Cheraghi, 2014:11; Burns & Grove, 2009:197). For further respect of confidentiality, the research report contains no names that may link participants to the study (de Vos et al, 2011:119; Heather, 2015:32). According to Brink, van
der Walt and van Rensburg (2011:34) for focus group interviews, absolute anonymity is not possible. In this study the right to privacy was respected by keeping participants’ personal information private and processing research data anonymously, using codes. During focus group interviews no personal details and no names were used and there was no mention of HIV status of each participant by the researcher (Brink, van der Walt and van Rensburg, 2011:34).

All HIV-positive mothers and their significant others provided written informed consent before participation in the study. The professional nurses in turn gave verbal informed consent to participate in the research study and their completion of narratives further confirmed their consent (Burns & Grove, 2009:205; de Vos et al, 2011:118). Explanation of the purpose and benefits of the study was given verbally to all participants to ensure comprehension as a basis for informed consent (Burns & Grove, 2009:203; Heather, 2015:32). To respect confidentiality the researcher informed the participants that the data collected will not be divulged or made available to anyone (Brink et al, 2011:35). It was further explained that participation in the study was voluntary so participants were free and they had a right to withdraw at any phase of the research process. Explanation was also given to the study participants that withdrawal from the study would not incur any undue disfavour on them.

1.18. DEVELOPMENT OF THE GUIDELINES TO SUPPORT HIV-POSITIVE MOTHERS

Some concepts can be linked by placing them together in a frame or box then converging them to show the relationship of one to the other, in order to form a conceptual framework. Such linkage may be done by ensuring that all concepts which portray the phenomenon under study are defined, and then identify all missing links or concepts. This linkage of concepts finally assisted in developing guidelines to support the HIV-positive mothers in decision-making on their infant feeding practices (Burns & Grove, 2009:149-150; NICE, 2014:165).

In the context of this study the researcher developed guidelines to support HIV-positive mothers regarding decisions on infant feeding practices following the data collection from HIV-positive mothers and significant others and its analysis.
The researcher further used the narratives obtained from the professional nurses and the concepts derived from the field notes, and focus group interviews information to develop guidelines. The evidence-based and related research literature review information was also included in the development of the guidelines. The concepts that were used to develop guidelines were derived from the topic under study as detailed in chapter 5 (Gronseth et al, 2011, :22; NICE, 2014:188).

**1.19. CONCLUSION**

The introduction and background of the study have been described in this chapter to highlight the National and the WHO guidelines and approaches to appropriate infant and young child feeding practices. The dilemma that HIV-positive mothers encounter with regard to infant feeding practices locally, nationally and globally was also indicated. The problem statement offered a brief discussion on the lack of management guidelines for infant feeding practices within the public health facilities. This occurs despite the presence of National and WHO guidelines which otherwise should be operationalised in local health facilities. The purpose of the study as well as the methodology used in the study were described. The trustworthiness and ethical considerations were briefly explained. The next chapter addresses the literature review.

**1.20. DIVISION OF CHAPTERS**

Chapter 1: Orientation of the Study

Chapter 2: Literature Review

Chapter 3: Research Methodology

Chapter 4: Data Analysis, Interpretation and Literature Control

Chapter 5: Conceptualization and Development of Guidelines

Chapter 6: Summary, Limitations and Recommendations
CHAPTER 2

LITERATURE REVIEW

2.1. INTRODUCTION

Literature review, as discussed in this chapter, is a written presentation of the information that has been published on the research topic, including the presentation of the researcher’s study that has been conducted. (Burns & Grove, 2009:92). It is utilised to position a niche for one’s research work and enables a researcher to engage critically and synthesise unique literature on the topic under study (Henning, van Rensburg & Smit, 2010:27).

Various views prevail among qualitative researchers with regard to the review of literature and its role in qualitative research. De Vos et al (2011:300-301), describe the approach of ‘ignorance is bliss’, in which the researcher reads briefly on the topic before conducting the study. Such a reading assists to determine if the same research has been done before. The literature review is then done at the end of data collection and analysis. In her doctoral thesis, Mokoena (2012:42) argues that it is a dangerous practice for a researcher to embark on the study without a clue on what the current literature says about the problem under study. The author further reiterates the proposal of various authors for undertaking preliminary review of literature prior to, and intensive literature study after data collection for verification of data with what exists in the literature.

In this chapter the review of the literature relates to the support with regard to infant feeding practices nationally and internationally. The literature is further reviewed and incorporated in the chapters on data analysis and development of guidelines in order to contextualise the research findings as well as to confirm or refute the existing findings including those in the other studies.
Infant feeding in HIV positive mothers, exclusive breastfeeding and HIV positive mothers and Prevention of Mother-to-Child Transmission of HIV, infant feeding decisions and practices, infant feeding support were some of the keywords that were used for literature search.

Databases that were used included National and International publications, peer reviewed studies on the study topic. The English literature search was made from various electronic databases including PubMed, MEDLINE, Cochrane library, Google Scholar, Google, Bing, Yahoo and Internet Archive. Publication dates mainly not more than ten years old since 2010, with focus on latest available versions.

2.2. OVERVIEW OF INFANT FEEDING PRACTICES

During antenatal care all mothers should be provided with information and counselling on infant feeding thus supporting them to decide on the method of infant feeding. The option that is made should be accompanied by important steps or recommendations to be considered to promote feeding safety and healthy infant outcomes (WHO, 2016:7).

In developed countries the choice of formula feeding might not create massive problems. However, in developing countries it might be difficult to choose and use formula feeding because of myriads of factors. Such factors include lack of clean water for feeds and equipment cleaning; insufficient funds to purchase milk, fuel for boiling water and sterilising equipment and refrigerators. The presence of such factors in turn inhibits the HIV-positive mother’s freedom to make an informed independent and sustainable decision on the choice of infant feeding practices (WHO, 2016:8).

Breastfeeding might also be a difficult choice for HIV-positive mothers where the condition of the breast is not favorable for breastfeeding, such as the presence of bleeding, cracked or infected nipples, mastitis or breast abscesses, thus subjecting her to a high risk of MTCT of HIV. This situation further exerts more
responsibility on health workers and professionals to provide necessary support for mothers to make appropriate decisions on infant feeding choices and adhere to them. The healthcare practitioners and healthcare workers are also obliged morally and ethically to disseminate appropriate information to the HIV-positive mothers with regard to infant feeding practices (Ramara, 2006:3).

The studies conducted in Sub-Saharan Africa and Uganda reflect the difficulties encountered by the HIV-positive mothers to adhere to the chosen methods. They need continuous support against all social pressures and cultural norms (Ramara, 2006:3). The development of policy-guidelines regarding infant feeding practices is imperative. The existing National guidelines stipulate that all healthcare providers should promote, support and protect optimal safe feeding of infants and young children. HIV-positive mothers should be counselled in order to make appropriate informed infant feeding decisions (Ramara, 2006:3; WHO, 2016).

In a study conducted in Ethiopia the findings revealed that exclusive the majority of the HIV-positive mothers were practicing exclusive replacement feeding with a significantly high number that practiced mixed feeding. The infant feeding decisions of the HIV positive mothers in the same study were based on their mode of delivery in that post caesarian section, exclusive formula feeding was mostly practiced (Mengistu & Kedir, 2017:5).

In another study conducted in Gauteng Province, South Africa, in 2016, some mothers were not free to use the infant feeding methods of their choice because of pressure from their significant others. In the same study Some mothers believed that infant formula was good for infants, because they saw it given to other infants in hospital. Furthermore, the mothers were influenced by factors such as cost as well as professional nurses to make infant feeding choices (Chaponda, Goon & Hoque, 2017:2). The findings in the latter studies indicate
the significance of women empowerment to be steadfast in their infant feeding choices and to have access to correct infant feeding information for PMTCT.

The need for counselling was further emphasised in a study that was done in Mpumalanga on infant-feeding practices of mothers enrolled in prevention of Mother to Child Transmission of HIV. In the latter study it was recommended that a better quality counselling should be provided to increase adherence to exclusive infant feeding practices (Ukpe et al, 2009:337). The need for counselling cannot be overemphasised where infant feeding decisions are to be made as it is an essential predictor of the infant feeding practices (Williams, Chanty, Geubbels, Ramaiya, Shemdoe, Tancredi & Young, 2016:120).

2.2.1. Recommendations for HIV-Positive Mothers

Infant feeding counselling should be provided at every antenatal care visit to re-enforce the mother’s choice and allow her a chance to review her choice before delivery. This will reduce stress post-delivery as it will be inappropriate to decide then. The National Department of Health (NDoH) and the World Health Organisation (WHO) have influenced mothers’ decisions on the best choice of infant feeding practices through various policies and recommendations (UNICEF, 2016:36).

The WHO 2010 guidelines on HIV and infant feeding presents the following recommendations which form the basis for support on decision making regarding the choice of infant feeding practice:

- HIV-positive mothers should exclusively breastfeed for the first six months of life, thereafter introduce solids, continuing with breastfeeding until 12 months of life, then discontinue if there is sufficient and safe replacement feed, to promote growth and development (National Department of Health (NDoH), 2014:88).

- When the mother decides to stop breastfeeding this should not be abruptly done but gradually, within a month, to minimise the possible negative effects thereof on the mother and the infant.
Mothers who choose formula feeding may do so if they meet the following conditions:

- they have safe water and sanitation facilities within reach;
- they can have access to formula feed whenever it is needed;
- they can prepare the formula in a safe manner that reduces the occurrence of diarrhea and malnutrition;
- they or their caregivers can exclusively formula feed for the first six months of the infant’s life;
- they have the support of their families and have access to a health facility that provides a comprehensive child health service at all times and days.

The aforementioned conditions for formula feeding are outlined in the following concepts which are further discussed below: accessibility, feasibility, affordability, sustainability and safety (AFASS) (UNICEF, 2016:108).

Where breastfeeding is not feasible e.g. when the mother has breast infections or the baby is too small to breastfeed, the mother may heat-treat the expressed breast milk and feed her infant if all the necessary facilities are available for such a feeding mode.

When the mother is HIV-positive, it is strongly recommended that she exclusively breastfeeds for the first six months then continues breastfeeding for up to two years or more to improve the infant’s survival chances, if it is acceptable particularly in the family (WHO, 2016:3; WHO, 2010a:6-8).

2.2.2. Safe Infant Feeding Practices

In view of the threat of HIV infection during breastfeeding, the Department of Health developed a prevention of Mother-to-Child transmission of HIV programme. This programme started operating in 2001 in South Africa as a major battlefront to curb the HIV pandemic. The programme created the modification of infant feeding practices nationally and globally. It advocated for the exclusive replacement feeding or exclusive breastfeeding and avoidance of mixed or partial feeding. The programme was well supported according to the study that was done in the Mpumalanga province in 2008. In that study more than ¾ of the mothers practiced the recommended infant feeding practices and exclusive breastfeeding was the most popular one (Ukpe et al, 2009, :337).
Breastfeeding remains the safer infant feeding method as confirmed by various studies that were done in Cote d’Ivoire, Zimbabwe and South Africa (Coutsoudis, 2012:14). In such studies it was observed that exclusive breastfeeding for up to six months is associated with a 3-4 fold decreased risk of HIV transmission compared to non-exclusive breastfeeding. This situation is worse in the resource-poor settings where stopping at six months increases the rate of fatal infections like pneumonia. This necessitates stopping only if there is adequate replacement feeding and the mother meets the stipulated conditions (Coutsoudis, 2012:14; WHO, 2016:8).

Mothers living with HIV should breastfeed for at least 12 months and may continue breastfeeding for up to 24 months or longer while being fully supported for ante-retroviral therapy (ART) adherence (UNICEF, 2016:3). Infant feeding counselling is the cornerstone of appropriate infant feeding choices because it provides an opportunity for the mother to be screened for the presence or absence of safe conditions for choosing formula feeding. Detailed comprehensive and individualised feeding counselling is crucial for the mothers to make feeding choices that will enhance HIV-free survival. The South African Policy on Infant and Young Child feeding and implementation guidelines, and the Baby Friendly Hospital Initiative provide an essential framework to support the HIV-positive mothers in their infant feeding choices (National Department of Health, 2008, p.36). The following information forms part of this essential framework:

In a study conducted in Addis Ababba the findings state that the mother’s high level of education and disclosure of HIV status to the spouse have positive influence towards correct infant feeding decisions and practices. The findings in the latter study could imply that the more educated the mothers are the higher the decision-making power and the more resistant they are to pressures from the spouse, family and society (Wakwoya, Zewudie & Gebresilasie, 2016:4).

- The guiding principles for safe infant feeding
The healthcare practitioners, lay counsellors and community health workers need to be capacitated on infant feeding counselling within the HIV context;

The healthcare practitioners should be competent enough to provide quality, unambiguous, unbiased information on the risk of HIV transmission through breastfeeding and replacement feeding;

Immediately after the first post-test counselling the mother should be counselled on infant feeding options available and during every antenatal care visit;

The mothers should be strongly discouraged from practicing mixed feeding to minimise the risk of childhood infections (National Department of Health, 2008:36; UNICEF, 2016:8; Trickey, 2012:74).

Baby Friendly Hospital Initiative (BFHI) and infant feeding
As a global strategy for infant and young child feeding, the Baby Friendly Hospital Initiative was launched by the WHO and the United Nations Children’s Fund (UNICEF) in 1991 to support the maternity services in the implementation of the Ten Steps to Successful Breast Feeding (WHO, 2017:14). The latter steps, commonly known as Ten Steps were enshrined in the 1989 WHO and UNICEF joint statement: ‘Protecting, Promoting and Supporting Breastfeeding’. The aim of publishing such steps by WHO and UNICEF was to promote breastfeeding by all maternity hospitals.

BFHI is regarded as a cornerstone of the global strategy for the eradication of all barriers to successful breastfeeding and indeed evidence reflects an increase in breastfeeding rates (Dykes & Moran, 2009:32-33). The periodic accreditation of the maternity hospitals on the BFHI status enhances sustainability of this BFHI thus promoting best practices in infant feeding (UNICEF, 2011:71). It entails explanation, demonstration and assistance to the mothers to acquire the skills for breastfeeding and infant feeding (National Department of Health, 2013:19).

2.2.3. Exclusive Breastfeeding
Breastfeeding is a natural, convenient and recommended method of infant feeding, ideally for all infants, globally. It is the best source of nutrition for the infants irrespective of cultural, social, religious and ethnic background. Exclusive breastfeeding (EBF) by HIV-positive mothers is associated with reduced risk of HIV transmission via breastmilk (Tuthill, Butler, Pellow ski, McGrath, Cusson, Gable & Fisher, 2017:1481; Muluye, Woldeyohannes, Gizachew & Tiruneh, 2012:2).

Exclusive breastfeeding is a method of feeding in which the infant is solely given breast milk and no other feed or drink or water is given. However, medicine drops or syrups may be given as required. HIV-positive mothers should exclusively breastfeed for the first six months of an infant’s life to minimise the risk of vertical HIV transmission through breast milk. Exclusive breastfeeding is a recommendation by the National Department of Health, South Africa, according to the Infant and Young Child Feeding Policy of 2013. The policy recommends that the mothers, both infected and uninfected with HIV should exclusively breastfeed their infants during the first six months of life. They may then introduce adequate, safe and appropriate complementary food at six months (Department of Health, 2013:14).

Despite the national recommendations, the mother still has a responsibility to make an informed decision on the infant feeding method of her choice, together with her spouse, or any other significant family member. However, the implications of infant feeding choices should be seriously considered and weighed accordingly in order to make an informed choice (Samour & King, 2012:74). The infant feeding choices such as exclusive breastfeeding remain a complex phenomenon because of influence of family, community, and health-care providers, hence a need for their buy-in for support (Tuthill et al, 2017:1489).
Most women in this research study required some time to cautiously discuss with their husbands and significant others before making a choice. In most instances infant feeding practices involved frequent negotiations between the mother and her entire household. Such negotiations are necessary because she values their opinions and support to make feeding options (Desclaux & Alfieri, 2009:826). It is thus evident that the mother's attitude with regard to breastfeeding is not only influenced by socio-demographic factors. The opinions of her family members and the society at large also influence her freedom to make infant feeding decisions (Tuthill et al, 2017:1489).

- **Advantages of breastfeeding**
The following are some of the advantages of breastfeeding that form the basis for the mother's infant feeding decision:

- Superior nutritional composition necessary for infant's growth and development;
- Provision of immunologic and enzymatic composition, essential for protection against childhood infections;
- Health benefits for the mother, e.g. promotion of uterine involution and body image, reducing chance of breasts and ovarian cancer;
- Lower cost and increased convenience such as. no need to buy and to prepare or even warm it;
- Enhanced maternal-infant bonding since the mother spends sufficient time to communicate and bond with her infant;
- Decreased incidence of respiratory and gastro-intestinal infections;
- Leaner body composition for infants at 1 year of age, such as no overfeeding and obesity as the nutrients are in adequate amount;
- Decreased incidence of atopic dermatitis because it prevents allergies as it's natural;
- Improved cognitive development in that balanced nutrition is supplied to the body including brain for its entire functioning (Samour & King, 2012:72; Department of Health, 2013:42-43).
Factors influencing successful breastfeeding

The extent to which the mother is motivated and confident with breastfeeding will determine the outcome of the breastfeeding. Success in Exclusive breastfeeding is achieved when the mother has confidence, motivation and support from the family and friends as well as health professionals (Odeny, Pfeiffer, Farquhar, Igonya, Gatuguta, Kagwaini, Nduati, Kiarie & Bosire, 2016:256). Suckling stimulates the release of prolactin, which stimulates milk production and oxytocin, which promotes the release of milk. It is therefore important to encourage breastfeeding on demand in order to sustain milk production and release (Samour & King, 2012:74).

Unlike breastfeeding according to the schedule, breastfeeding on demand enhances sustainability of breastfeeding as an infant feeding choice. Infants on exclusive breastfeeding should be given no food or drink other than breast milk unless such is medically indicated. No dummies or teats should be used for infants on EBF to minimise infections and nipple confusion which may hinder successful breastfeeding (Department of Health, 2013:41-43).

Initiation of breastfeeding

Ideally breastfeeding should be initiated within an hour and not more than two hours after delivery. It helps to stimulate suckling reflexes that are important for milk production and to promote mother-infant bonding, growth and development of infant (Department of Health, 2013:44).

Positioning and attachment of the baby to the breast

The condition of the mother also influences breastfeeding. A relaxed, healthy, comfortable mother provides undivided attention and promotes successful breastfeeding. The mother should therefore assume a comfortable position, e.g. sitting up or a lateral position, supported by pillows according to her preference (Samour & King, 2012:74). Ensure that mothers receive the support necessary to acquire the skills of correct positioning and attachment of their infants for optimal breastfeeding. The latter is supported by a study conducted in 2015 in which it was stated that correct knowledge, skills of and duration of exclusive
breastfeeding also predicted success of exclusive breastfeeding in the study community (Idris, Tafeng, Elgorashi, 2015:30)

correct knowledge and skills on breastfeeding promote exclusive breastfeeding

Demonstrate the necessary techniques to the mother, thereby assisting her to acquire the skill for herself (National Department of Health, 2013:18). The following position should be adopted for effective feeding:

- Hold infant with head and body straight;
- Let infant face the breast with its nose opposite the mother’s nipple
- Let the mother keep infant’s body close to hers and support entire body not merely head and shoulders;
- Let the mother ensure proper attachment of the baby’s nipple to the breast by: touching infant’s lips with her nipple then wait until the infant’s mouth is wide open; then move breast into the infant’s mouth in such a manner that its lower lip is well under the nipple. This will facilitate a firm grip of the breast and deep effective suckling and swallowing.
- When the infant is well positioned, the mother should use one hand to support and guide her breast, allowing the other hand to be around the infant’s back, and she cups the bottom of her infant in order to support and move the infant (Samour & King, 2012:74; UNICEF, 2011:72).

- **Latching on the breast**

The mother is encouraged to stimulate the rooting reflex by touching the infant’s cheek closest to her. The infant should react by opening its mouth and the mother immediately guides the baby’s mouth into the breast. Most of the mother’s areola should be in the infant’s mouth with the lower lip turned out, tongue under the nipple to allow for a firm grasp of breast. The infant will then suck rapidly then slower, with rhythmic sucking and swallowing. This will stimulate the release of milk. As a sign of effective breastfeeding and release or letting down of milk, there will be rapid swallowing with milk flowing around the infant’s mouth. The mother may experience a tingling of the breast and tightening of uterus (Samour & King, 2012:74).
It is crucial to properly remove the infant from the breast on completion or when changing to another breast to prevent cracked nipples. The mother may insert her finger at the corner of the infant’s mouth thereby breaking the suction and detaching the breast from the infant’s mouth.

- **Duration and timing of infant’s feeds**
Breast feeding duration is determined by the infant hence the mother should do it as frequently as the infant demands it. Within the first weeks to six months of life at least 8-12 times a day is ideal, or every 2-3 hours. The infant should preferably feed until the first breast is emptied before moving to the next breast. This will prevent stasis of milk which may result in breast abscesses. The breasts should also be alternated to reduce excessive pressure and irritation on the same breast thereby preventing breast cracks and infection.

The European Society for Paediatric Gastroenterology, Hepatology and Nutrition and the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition recommend exclusive breastfeeding for about six months. They further recommend weaning from four to six months and continuous breastfeeding for two years (Lombard & Labuschagne II, 2012:29). This approach corresponds well with the South African National PMTCT programme on infant feeding for HIV-positive mothers. This programme recommends that these mothers should exclusively breastfeed their infants for the first six months of life, with continued breastfeeding for up to 12 months. Women whose HIV status is unknown should breastfeed exclusively for the first six months of life then continue breastfeeding for up to two years and beyond (Department of Health, 2013:41).

- **Evaluating the outcome of breastfeeding**
The mother should be in a position to know that her infant has had enough milk. It is therefore very important for the mother to assess the satisfaction of the infant to determine the adequacy of breastfeeding. The following may be of value for her to obtain a positive outcome:

  - the infant may have at least 6-8 wet nappies changed per day or 4-5 soaked nappies;
  - the infant may pass stools with each feeding;
the infant may show satisfaction after the breastfeed e.g. not opening the mouth even after stimulation or even pushing the nipple out of the breast;

- the infant will show weight gain especially in the first month of life.

(Samour & King, 2012:74).

2.2.4. Exclusive Formula Feeding

In instances where the mother chooses not to breastfeed exclusively the ideal alternative feeding method is replacement feeding. According to the WHO, the best choice may be expressed breast milk, from the infant’s mother, the human milk bank, wet nursing or a breast milk substitute. The decision depends on the individual mother’s situation (Dykes and Moran, 2009:17). If the mother can afford it, and meets all criteria for choice of formula feeding, she may feed on breast milk substitutes (Department of Health, 2013:44-45).

Mixed feeding, in which the mother partially breastfeeds and partially practices formula feeding should be avoided at all times for HIV-positive mothers. The rationale behind this is that mixed feeding leads to a high risk of Mother-To-Child transmission of HIV infection. Mothers who opt for exclusive replacement feeding should choose only the appropriate breast milk substitutes, the commercial infant formula milk. Such mothers should do so if they meet stipulated conditions for replacement feeding. Such conditions include access to safe water and sanitation facilities in their household and ability to exclusively formula feed for the first six months of life (Department of Health, 2013:42).

Exclusive replacement feeding predisposes the infant to various childhood infections especially where environmental health risk factors are not eliminated prior to its choice. Such factors include, but are not limited to, lack of safe water and inadequate sanitation, lack of a constant supply of the formula and fuel for boiling water and warming feeds. Consequently, fatal conditions like gastro-intestinal and respiratory infections erupt and become compounded by a lack of access to 24-hour comprehensive child healthcare services. There is also a correlation between formula feeding and excess body fat in childhood which may
increase the risk of some diseases like cancer during adulthood (Dykes & Moran, 2009:21-22).

Whatever choice of infant feeding the mother makes, it is crucial that the environment becomes more supportive. This entails adequate counselling, capacity building, supportive health professionals, community health workers, family and significant others. The replacement feeding particularly requires adequate financial resources to ensure that it is sustainable (Saloojee, Gray & McIntyre, 2011:10; Trickey, 2012:74).

- **Infant formula**

Commercially prepared iron fortified infant formulas remain the recommended safe type of replacement feeds. This is supported and regulated by the Infant Formula Act of 1980 as reviewed and updated by the relevant authorities. The appropriate information should be offered to the HIV-positive mothers who choose replacement feeding (WHO, 2016:7). The standard infant formula, made from cow’s milk, is considered the most common human milk substitute. Some micronutrients like whey are added to enable such formula to mimic human milk (Samour & King, 2012:74-75).

Some infant formulas are packaged as ready to use and are suitable for mothers who lack the capability to prepare when feed is needed e.g. while travelling, however, these are the most expensive types. Other formulas are available as concentrated liquid formulas ready to dissolve in water and use. The last formula type, which is popular, is powder formula and is prepared by mixing with water according to the directions given for each container. This information should be clearly explained to the mothers, especially those with low literacy levels, to ensure safe practice (Samour & King, 2012:81).

The more correctly prepared these mixtures are the safer they are for the infants, and the less risk there is of over and underfeeding. In all these forms of formula feeds, water and fuel are critical, hence a proper assessment of the mother’s ability is done before encouraging her to choose replacement feeding (Samour & King, 2012:81; WHO, 2016:22). It should be emphasised that even if the mother chooses formula feeding, no solids should be introduced before the
infant is six months old. However, some medicinal preparations like polio drops, vitamins, minerals syrups may be administered as needed. (Yezingane & UNICEF, 2011:8).

- **Formula milk preparation guide**
  The following information should be provided to the mother or caregiver to enhance safe formula feeding practices thus reducing infant morbidity and mortality:
  
  - Sterile water should be used for preparing infant’s feeds, although after three months of age water from the tap may be used without a need to boil it;
  - Hands should be washed with soap and water before mixing to maximise good personal hygiene;
  - All the utensils and equipment used should be cleaned thoroughly with liquid soap and where possible, a small fine brush should be used to clean teats and the bottle caps;
  - The prepared feeds may be stored in the refrigerator, but should be consumed within 24 hours after reconstitution according to the manufacturer’s instruction;
  - Open cans with milk powder may be kept in the cupboards for not more than 30 days because after that period they lose potency;
  - Ideally, warm milk is given but should be tested to prevent scalding and may be warmed by placing the closed bottle in a bowl of warm water. Use of a microwave is discouraged because of the difficulty in determining the temperature of the milk which may result in scalding if the milk is hotter at the centre than at the periphery of the bottle (WHO, 2016:22; Samour & King, 2012:86-87).

- **Duration and technique of bottle feeding**
  The need for the creation of an infant-mother bond cannot be emphasised in view of bottle versus breastfeeding. The temptation may exist for the mother to leave the bottle in the infant’s mouth but this practice should be strongly discouraged to reduce cot deaths from suffocation and choking.

  The mother should then be in a comfortable position, holding the infant such that eye contact is maintained, holding the bottle in such a way that milk always fill up
the teat to prevent air sucking. The latter may cause flatulence and abdominal discomfort e.g. cramps. The infant should be allowed to feed over 15 to 30 minutes to allow gradual feeding and prevent vomiting from rapid feeding. Any remaining feed should be discarded and the bottle cleaned and made ready for the next feeding (Samour & King, 2012:87).

2.2.5. Global Perspective of Infant Feeding Practices

Globally the HIV-positive mothers are still expected to make a choice between two options of infant feeding, namely, replacement feeding using breast milk substitutes or exclusive breastfeeding with early weaning. It is an international recommendation that women should choose the option that suits their circumstances considering their environmental, social, economic and medical conditions. The information given to them forms the basis for making their choices therefore, counselling is internationally viewed as critical for the HIV-positive mothers to develop the confidence to make informed choices (Desclaux & Alfieri, 2009:821-822).

Various studies have been done on infant feeding practices. In these studies various dynamics were elicited around the information that is included in counselling the mothers. They include prescriptive information that coerces the mother into a particular choice as well as cultural stigma surrounding HIV, personal beliefs and significance of disclosure of HIV status to partner and family (Tuthill et al, 2017:1488). This limits or even excludes her right to make informed, confident options.

In a study done in Cambodia and Cameroon there was evidence of diverse practices regarding information sharing, both in the content and in aspects considered when counselling. Some women were informed of only one feeding option, which was also proposed to them and to others. In view of their poor socio-economic background, only one method, exclusive breastfeeding, was explained. This situation undermined the mother’s right to make an informed choice of infant feeding (Desclaux & Alfieri, 2009:823)
The Global Strategy for Infant and Young Child Feeding as adopted by WHO in 2002 is used as a point of departure for various governments and non-governmental organisations and institutions to adapt and improve their infant feeding practices. The WHO and UNICEF started a joint venture to develop the global strategy to improve nutritional status, growth and development and health of infants and young children.

The specific objectives of the global strategy are as follows:

- To raise awareness about the main problems that affect feeding, identify ways to solve them and provide a framework of essential interventions;
- To increase the commitment of governments, international organisations and the other concerned parties of optimal feeding practices;
- To create an enabling environment for mothers, families and significant others to make and implement informed choices about the feeding practices.

The global strategy reaffirms the urgency and relevance of the Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding operational targets, namely:

- Appointing and establishing a national breastfeeding coordinator and a multi-sectoral national breastfeeding committee;
- Ensuring that every facility that provides maternity services practices fully the ten steps to successful breastfeeding;
- Giving effect to the International Code of Marketing of Breast-milk Substitutes;

Following the reaffirmation of the urgency and relevance of the above operational plans, various discussions continued which culminated with the joint statement again by WHO and UNICEF. The purpose of this statement was to increase awareness of the critical role that health services play to promote breastfeeding and to describe how mothers should be provided with appropriate
information and support. This statement thus served as the basis for the Baby-friendly Hospital Initiative (BFHI) which was formally launched by WHO and UNICEF in 1991. The BFHI provides the ten best practice standards, enshrined in the Ten Steps to Successful Breast Feeding (Ten Steps), which guide practice in maternity units, and so for HIV-positive mothers, on infant feeding practices (Dykes & Moran, 2009:7 &33; UNICEF, 2012:49 & 70).

The BFHI was also established to reward hospitals which ensured that their infant feeding practices conformed to the Ten Steps. Whilst many government hospitals strive to attain the BFHI across the world, Abu Dhabi in the United Arab Emirates (UAE) became one of the first hospitals to achieve BFHI accreditation. It was noted that cultural diversity in Abu Dhabi yields various challenges in providing breastfeeding advice (WHO, 2017:19).

According to the National guidelines for the Infant and Young Child Feeding Policy of 2013 there is a need to strengthen strategies for increasing the rates of exclusive breastfeeding, namely: the Mother-Baby Friendly Initiative (MBFI), Kangaroo Mother Care (KMC), human breast milk banking and code implementation (National Department of Health, 2013:12).

The challenges were centered on interpretation issues, women’s rights and traditional practices. In most cases the colostrum is not given to the infant because it is regarded as polluted or too thick for the baby to digest. This contradicts the nutritional value of colostrum and how important it is for the mothers to feed their infants on it (Edwards, Abdulali & Kumar, 2011:12).

2.3. EVIDENCE-BASED INFANT FEEDING PRACTICES

A variety of practices have been identified based on research studies undertaken on infant feeding practices. Some of these studies are national, others are global as discussed below.

2.3.1. South African Perspectives
Some studies have shown that infant and young child feeding is enhanced in the presence of skilled support from healthcare personnel during antenatal, intrapartum, and postpartum care including follow-up care. The healthcare personnel should therefore possess up to date evidence-based knowledge and skills on appropriate infant and young child feeding practices. This will enable them to provide quality counselling skills and adequate support to the mothers and caregivers (Department of Health, 2013:8).

The infant feeding messages that are sent by hospital health professionals were in conflict with those sent by clinic nurses resulting in confusion and mixed feeding. This study revealed that the infant feeding education was not aligned to the national infant feeding policy where PMTCT of HIV was prioritised. It became clear that there is a need to strengthen such education and intensify health worker training. This will promote the dissemination of uniform messages on infant feeding practices, relevant to the National Policy (Ladzani, Peltzer, Mlambo & Phaweni, 2010:540-541; Jeff, 2014:1).

2.3.2. International Perspectives

Stigmatisation is a major challenge revealed in one study, emanating from traditional practices like the traditional naming ceremony which is held on the eighth day of an infant’s life in African countries like Nigeria (Ellis, 2013:14). This was shown in the results of a study done in Ibadan, Nigeria on infant feeding patterns of HIV-positive women in a prevention of mother-to-child transmission programme in 2009. In this study most of the mothers chose exclusive formula feeding, but some admitted that they were actually mixed-feeding.

Their main challenge in the study done in Nigeria was stigmatisation, and the pressure was greatest during the traditional naming ceremony. In this ceremony all relatives and friends’ eyes were watching the mother, which made it difficult to explain the reason for her choice. Many of them resorted to lies in order to protect their choices and respond to the various questions about their infant feeding choices (Oladokun, Brown & Osinusi, 2010:1111). Clearly HIV-positive mothers have difficulty in adhering to their choice of infant feeding practices due to socio-cultural conflicts and their stereo-typed environment. These variables in
turn limit their freedom and confidence to make informed decisions (Lazarus, Struthers & Violari, 2013:4).

Promotion support, where specific infant feeding education is given, has been linked with positive outcomes. It is valued much more than mere recommendations as a strategy for better survival of infants born of HIV-positive mothers. The emphasis is on consistent messages and strong incentives within the social-cultural context of each country (Zulliger et al, 2013:1552). The infant feeding choices that the mothers make should strengthen their identity, position and role rather than cause stigmatisation. The traditions and beliefs of their communities are therefore strongly considered when making such decisions (David, Abbas-Chorfa, Vanhems, Vallin, Iwaz & Ecochard, 2008:147).

The need for provision of full information on infant feeding options and support of the mothers was further echoed in a study that was done in South Western Nigeria in 2006. In this study the infant feeding practices are not much different from those in the studies already presented. Half of the mothers who initially intended to exclusively replacement feed (ERF) and fifteen per cent who intended to exclusively breastfeed (EBF) mixed-fed their infants. This indicates that those who opted for exclusively breastfeading complied more than those for exclusive replacement feeding practices (Adejuyigbe, Orji, Onayade, Makinde & Anyabolu, 2008:305-309; Ellis, 2013:14).

The most common reasons given for choosing EBF were fear of stigmatisation by the family members and friends, the non-disclosure of their HIV status and the financial challenges. The most common reasons for choosing ERF were the need for their infants to survive their mothers, health workers’ advice and the death of previous infant. Such mothers gave incorrect reasons to their family members regarding reasons for ERF. Such reasons included being on drugs that could harm the infant, not having enough milk and having bad breast milk.

The mixed-feeding practices for those who opted for EBF included giving water, infant formula, herbal mixture and cereal with infant formula. The reasons for
mixed-feeding included pressure from the infants’ grandmothers, inadequate milk, non-disclosure of HIV status and lack of funds (Adejuyigbe, Orji, Onayade, Makinde & Anyabolu, 2008:305-309; Ellis, 2013:14). According to this study, exclusive breastfeeding is the preferred infant feeding option of HIV positive mothers in south western Nigeria, following counselling on the WHO recommendations.

Nationally and internationally in all maternity healthcare facilities all HIV-positive mothers and other mothers should be counselled. This will enable them to make informed decisions on their infant feeding practices (Adejuyigbe et al, 2008:305-309). Health services at all levels of health care delivery need to support mothers living with HIV in their chosen feeding practices even when these are inconsistent with nationally recommended practices. As endorsed by the WHO this principle remains relevant to the updated recommendations (UNICEF, 2016:27).

The grandmothers, especially the paternal ones, play a major role and act as catalysts for the social pressure of complimentary feeds immediately after birth, to which the mothers exposed. Most of the mothers in this study agreed that the information that they receive from healthcare professionals could change this pattern if only it was sufficient. It is believed that transformative learning would provide more empowerment for the HIV-positive mothers to make independent informed decisions on infant feeding practices. This seems to be lacking in the counselling given to them. It is also necessary that infant feeding education be given jointly to mothers, fathers and grandmothers for more efficient results. Improvement on counselling is also a need to be met, e.g. by more follow-up, better communication skills and assertiveness among counsellors on EBF practices (Ostergaard & Bula, 2010:219-220; Oguta, Omwega & Sehmi, 2017:8).

2.4. LEGISLATIVE FRAMEWORK ON INFANT FEEDING PRACTICES
Infant feeding has always been the concern of the government at all levels, and that of HIV-positive mothers has also been given special attention, with the advent of national and international guidelines, national and global policies of child and young infant feeding practices. According to the World Health Organisation (WHO) exclusive breastfeeding until six months of life, then continuing breastfeeding for two years remains a recommended infant feeding practice. This is coupled with timely introduction of adequate amounts of safe and suitable complementary foods (Lombard, Labuschagne, 2012:29; WHO, 2016:3)

2.4.1. International Legislative Framework

In order to address the challenge of child mortality and achieve the millennium development goal (MDG) number five, the Global Strategy for Infant and Young Child Feeding (Global Strategy) was adopted by WHO in May 2002. This MDG is to reduce child mortality by two thirds by 2015. Exclusive breastfeeding for the first six months and breastfeeding for up to twelve months as a strategy enclosed within this Global Strategy is one strategy for improving child survival thus achieving MDG five.

Various consultations and processes including WHO’s methodical consultation of the governments, solicitation of inputs from myriads of interested parties and non-governmental organisations occurred after the adoption of this Global Strategy. Such consultations were centred on crucial topics such as the optimal length of exclusive breastfeeding and prevention of mother-to-child transmission of human immunodeficiency virus (Dykes and Moran, 2009:1; WHO, 2016:2).

The latter processes led to urge various governments to adapt the Global Strategy to their nutrition and child policies and programmes in accordance with their specific local needs and challenges. The WHO and UNICEF then started to jointly develop the Global Strategy with its aim being to improve nutritional
status, health, growth, development and survival of young children and infants.

The objectives of the Global Strategy are as follows:

- To raise awareness of problems that affect feeding, identify approaches to handle such problems and to provide a framework of essential interventions.
- To increase commitment of governments and all concerned parties to optimal feeding practices.
- To create a positive environment that will allow mothers, families and caregivers to implement their choices of infant feeding practices.
- The Global Strategy further affirms the relevance and urgency of the four operational targets of the Innocenti Declaration on the protection, promotion and Support of Breastfeeding (Dykes & Moran, 2009:2; WHO, 2016:12) namely:
  - Appointing a national breastfeeding coordinator and establishing a multi-sectoral national breastfeeding committee;
  - Ensuring that each facility that provides maternity health services practice the Ten Steps to successful breastfeeding;
  - Giving effect to the International Code of Marketing of breast milk substitutes and subsequent relevant resolutions of the World Health Assembly;
  - Enacting legislation to protect the rights of the working women to breastfeed and establishing the means to enforce such rights (WHO, 2003:7; Zulliger et al, 2013:1552).

2.4.2. National Legislative Framework

The national legislative framework in South Africa occurs in conjunction with global initiatives in view of the global nature of infant feeding challenges. The discussion on this aspect will therefore confine itself to the initiatives that are of South Africa origin. In response to a global call for world countries to decide on the appropriate infant feeding practices, the South African Department of Health published regulations which prohibit practices that promote use of breast milk substitutes, in 2012 (Mills, 2014:260).
In a National Breastfeeding Consultative meeting held in August 2011 South Africa declared to actively promote, protect and support exclusive breastfeeding as a public health intervention. This was a Tshwane declaration of support for breastfeeding in South Africa. The purpose of this intervention was to optimise child survival and is a commitment to take actions to demonstrate this declaration. South Africa further adopted the 2010 WHO guidelines on HIV and Infant Feeding and recommend counselling and support of HIV-positive mothers on infant feeding. Ultimately, following the consultative meeting, the National Department of Health issued a directive to phase out the distribution of free milk formula for infant feeding (Department of Health, 2013:4-9; 57).

South Africa responded to the Tshwane Declaration for support of Breastfeeding by passing a legislation related to the labelling and advertising of food stuffs for infants and young children in 2012. Various policy changes were made in response to the declaration including legislation on the code of marketing of breast milk substitutes in South Africa. According to the code of marketing no person shall import, sell or offer for sale, infant formula for dietary purpose (Department of Health, 2012, p.11). Evidence-based findings state that healthcare workers are the crucial link between the policy and practice hence a need to intensively equip them with infant feeding information (Department of Health, 2013:4).

2.5. CONCLUSION

The literature review on infant feeding practices was addressed in this chapter, giving background on what is happening internationally and nationally on infant feeding practices. Discussion was held on the safe infant feeding practices, recommendations for infant feeding in mothers who tested HIV-positive for elimination of mother-to-child transmission. Baby-friendly hospital initiatives and breastfeeding, exclusive breastfeeding, pros and cons of breastfeeding, exclusive formula feeding were described. In this chapter the international and
national perspectives on infant feeding practices and legislative framework were described including evidence-based infant feeding practices. The next chapter is on research methodology.

CHAPTER 3
RESEARCH METHODOLOGY

3.1. INTRODUCTION

In this chapter the research design and the methods applied in this study are described in details. The ethical considerations and the measures that were implemented to ensure trustworthiness are also described herein.
The study purpose was to explore the experiences of HIV-positive mothers on their decisions about their choice of infant feeding practices. The study purpose was also to develop guidelines to support infant feeding practices of HIV-positive mothers in the rural communities of the Mbombela Municipality of Mpumalanga Province. The research was conducted in three phases in order to attain the above-stated purpose. The first two phases are described in this chapter and the third phase is dealt with in chapter 6.

3.2. PHASES

The research was conducted in three phases in order to attain the above-stated purpose. The first two phases are described in this chapter and the third phase is dealt with in chapter 6.

• Phase 1
A descriptive, explorative and qualitative research study was undertaken. The focus group interviews were conducted with the HIV-positive mothers and with their significant others. Furthermore, narratives were gathered from the professional nurses who provide services, including infant feeding practices. The data from the interviews and narratives was transcribed, analysed and interpreted using Creswell's steps of data analysis as described by Marshall and Rossman (1999) in de Vos et al (2011:403-404).

• Phase 2
In this phase the data was collected from the focus group interviews, the narratives and the field notes and documented. The interpretation of the documented data was validated as new insights emerged with regard to the kind of support required by HIV-positive mothers on their choice of infant feeding practices. The findings from the study culminated in the development of guidelines as discussed in phase 3 (chapter 5) of the study.

• Phase 3
Part of the purpose of the study is to develop guidelines to support HIV-positive mothers on their decisions about their choice of infant feeding practices. During this phase the guidelines were developed based on the themes which emerged
from the focus group interviews, narratives, field notes and the relevant literature. The guidelines were developed using the processes of guidelines development such as that described by the National Institute for Health and Care Excellence (NICE, 2014:5).

3.3 RESEARCH DESIGN

According to Creswell and Plano Clark (2011:53) and Creswell (2014:40) the research design assists to guide the methods decisions that researchers must make and specific direction during their studies. They also set the logic by which research data interpretations are made. De Vos et al (2011:142-143) view research design as a process of focusing on the end product and outlining all the steps in carrying out the research project in order to achieve the intended outcome. A qualitative, explorative and descriptive design was used in this study to explore and describe the experiences of HIV-positive mothers in the context of emancipated decision-making on infant feeding practices as discussed below.

3.3.1 Qualitative Research Paradigm

Research paradigm is a set of beliefs that are common and agreed upon with regard to how problems should be addressed. Research paradigm can be characterized in accordance with their ontology (what is reality) epistemology (how can one have knowledge of something and methodology (how can one find that something (Patel, 2015:1). Importance of paradigm is seen where ontology and epistemology enable a researcher to understand have holistic view of the knowledge abou a phenomenon. Paradigm further enables the researcher to identify with the knowledge and seek relevant strategies to discover that knowledge. According to the postmordenist constructivists, as one of paradigms, that best fits into this study, experiences and culture are key to understand people’s behaviours. Qualitative research is an ideal method to search access people’s experiences and cultural context (Patel, 2015:4).
A qualitative research inquiry seeks to elicit a different view of a theme that is studied and allows the participants to be open-ended and open-minded in expressing their responses. The researcher is in turn enabled to examine, in depth, some qualities and characteristics or properties of the phenomenon under study, for better understanding and explanation (Henning, van Rensburg & Smit, 2010:5; Marshall & Rossman, 2016:2).

Qualitative research is based on the premise that knowledge about human beings may only be acquired by describing their lived experiences, cultures, social processes and behaviour (Gray, Grove & Sutherland, 2017:4). This notion is supported by Burns and Grove (2009:22) who affirm that qualitative research is an interactive and systematic approach used to describe human life experiences such as comfort and caring. Qualitative researchers make use of inductive reasoning and make specific observations, then draw inferences about a particular phenomenon (de Vos et al, 2011:64; Creswell, 2014:32).

According to de Vos et al (2011:65) there are other characteristics of qualitative research. Data is collected at the site where participants experience the problem under study. The data in this study was collected within the natural setting as agreed with the participants, and multiple data was collected. The natural setting refers to the field such as the participant’s home, workplace or the place of choice of participants, which are uncontrolled real-life settings where studies are conducted (Polit & Beck, 2008:57; Burns & Grove, 2009:35). The settings in which the focus group interviews were conducted were the CHC1 and CHC2 as chosen by and agreed with the study participants. These are natural settings because the participants are familiar with them because they use these facilities for all their healthcare needs as their entry point into the health system (Creswell, 2014:234).

The data is collected by examining documents, observing and interviewing participants. The researcher collected data independently with the help of a research facilitator by conducting focus group interviews, collecting field notes and observing the entire process of focus group interviews. In this process the researcher gathered views and experiences of participants using the interview
protocol. The researcher also had one-on-one interaction with participants and managed the use of audio-tape recorder to capture focus group interviews during the course of the study (Creswell, 2014:234).

The researcher gathered multiple forms of data which included focus group interviews through the use of audio-tape recorder, field notes and observation of participants’ behaviour during the interview processes in each focus group session (Creswell, 2014:234). The data was also gathered through narratives which were completed by the professional nurses on the study topic. This approach of multiple forms of data collection ensured data triangulation for validity thereof (Burns & Grove, 2010:231; Henning et al, 2010:103).

During focus group interviews the researcher allowed free expression and probed as participants responded to the varied questions for deeper understanding of their views. In this way the researcher focused on and learnt what participants were saying without any personal interference. The probing that was done is supported by Herodotou (2016:2) who suggests that there should be more collaboration between researchers and practitioners in naturalistic observations.

The collaboration during focus group interviews allowed for a productive dialogue rather than using participants as mere contributors of research data (Creswell, 2014:234-235). The collaboration further allowed the researcher to learn from participants as they expressed their views. An expression such as “Hmmm” indicates a communicative action between interviewer and interviewee which encourages opening up as needed for more meaning (Henning et al, 2010:57). The expressions such as “eish” were elicited and followed up accordingly for more meaning.

The researcher observed, listened and interpreted what the participants said and their behaviour during focus group interviews. Apart from the description of the human experiences researchers also sometimes study the phenomena about which very little is known. In the latter cases in-depth probing becomes significant to answer some questions about the dimensions, variations and
importance of the infant feeding practices of HIV-positive mothers (Polit & Beck, 2008:19). The researcher worked to and fro in an effort to search for deeper meaning by probing the participants as the need arose during focus group interviews (Creswell, 2014:234).

The development of guidelines to support HIV-positive mothers in their decisions about their choice of infant feeding practices is a new, yet significant phenomenon for sustainable prevention of mother-to-child transmission of HIV infection. In this study the researcher undertook focus group interviews and collected narratives to gather complex and holistic views on the choice of infant feeding practices. The HIV-positive mothers, their significant others and professional nurses were the source of such complex views and experiences on infant feeding practices (Creswell, 2014:235).

Based on the recommendations, views and experiences of participants on the choice of infant feeding practices, guidelines were developed for support of HIV-positive mothers in their choice of infant feeding practices. Henning et al (2010:139) supports the notion that the end product of qualitative study could be guidelines development.

3.3.2 Exploratory Research Studies

Exploratory study is defined as the initial research into a hypothetical or theoretical idea. Exploratory studies are designed to increase the knowledge of the field of study and provide insight into a situation and phenomenon under study (Creswell & Plano Clark, 2011:71).

In this study exploratory research was applied to investigate the full nature of the infant feeding practices of HIV-positive mothers. Exploratory research was found suitable for this study because little was known about the support given to HIV-positive mothers on the choice of infant feeding practices (Polit & Beck, 2012:20). Exploratory research was also chosen because the study topic is new
hence it requires extensive exploration for the researcher to understand more about it (Strydom, 2013:151-152).

Exploratory research was also chosen to assist the researcher to be acquainted with the infant feeding experiences of HIV-positive mothers, their significant others and child healthcare workers. Since exploratory studies investigate the full nature of a phenomenon, it was effective in exploring the views and experiences of the mothers and their significant others on infant feeding practices (de Vos et al, 2011:95-96; Creswell, 2014:44). This is evident in the wealth of data extracted from the study and the findings on analysis of this data as described in chapter 4.

3.3.3 Descriptive Studies

Descriptive study is defined as an attempt to explore and explain a particular topic while gathering more information about it. In descriptive studies the researcher makes an effort to describe what is happening based on evidence from gathered information rather than guess work (Kowalczyk, 2014:2). Descriptive studies serve as a starting point for the development of a theory or hypothesis formulation (Polit & Beck, 2008:274; Polit & Beck, 2012:20). They also provide information for deeper understanding of a phenomenon and development of theory or guidelines (Burns & Grove, 2009:237; de Vos et al, 2011:96).

The researcher in this study applied the descriptive design to gather rich and accurate data from participants on their views and experiences with regard to infant feeding practices of HIV-positive mothers. The participants, by virtue of being directly involved in the decision-making pertaining to infant feeding practices are the best source of information, hence the use of descriptive design for the study. The participants shared their views and experiences in response to questions on how they felt when making such decisions (Creswell, 2014:42). The information derived from the findings of such descriptions was used for the development of guidelines, following a description and analysis of those views, experiences and recommendations (de Vos et al, 2011:96).
3.3.4 Contextual Studies

The term context refers to the text or speech that comes immediately before and after a particular phrase or piece of text and helps to explain its meaning (Walter, 2015:1). The outcome of the study depends on the context within which the study was undertaken (de Vos et al, 2011:64). Contextual studies therefore tend to focus on activities within their specific settings.

The researcher involved the professional nurses who were engaged in the prevention of Mother-to-Child Transmission (PMTCT) of HIV programme within their work environment. Such an involvement makes the study contextual because the professional nurses working in the PMTCT unit are in the correct context to provide rich data for the study topic. The professional nurses also possess contextual variables in view of their influence on the HIV-positive mothers’ decision-making on infant feeding practices (Burns & Grove, 2009:178-179).

Henning et al (2010:24) attest that specific solutions may be developed only inside the context in which the problem occurs. They further assert that phenomena and events are interpreted better under the influence of and interaction with social contexts (Henning et al, 2010:20). The HIV-positive mothers and their significant others are directly involved in infant feeding practices within the HIV-positive context hence the study is contextual for gathering data from them as well.

3.4. RESEARCH METHOD

The research method is a systematic approach to the research process, which includes planning, structuring, population, sampling, data collection and analysis (Vosloo, 2014:318). Research methods are used to structure a study, gather and analyse information relevant to the research questions. The setting where research is conducted provides a better understanding and clarity on the context of the study and influences the study’s outcomes (Burns & Grove, 2009:178).
3.4.1. Study Setting

The study setting is defined as a description of an environment or location for conducting research which may be natural, partially controlled or highly controlled (Burns & Grove, 2009:722; IGI Global, 2015:1). When designing a protocol the researchers should report on the type of setting and the possible number of study sites. Such information contributes to success in recruitment and the increased retention of participants in the study (Spirit, 2013:1). Natural settings are suitable for descriptive studies whilst partially controlled and highly controlled settings are modified to suit a particular study (Burns & Grove, 2009:35).

The settings for this study were CHC1 and CHC2 in the Mbombela Municipality of Ehlanzeni District in Mpumalanga Province. These two centres provide 24-hour maternal and child health services, among others. Like all other Community Health Centres these two centres provide health programmes for the elimination of Mother-to-Child Transmission of HIV infection. Child health services provided in these centres include infant and young child feeding, counselling and management.

The selected study sites were found to be ideal for the following reasons:

- They had suitable clients in the community health centre for the study participants;
- They had well experienced professional nurses managing child health services as rich sources of required data for the study;
- They were accessible to the researcher to conduct the study especially to make follow-up visits to verify information when necessary;
- They provided privacy to participants, which is their right, in that they were interviewed in a setting of their choice which they were familiar with, away from curious community (de Vos et al, 2011:119; Burns & Grove 2009:362; Creswell, 2014:43).
- The successful execution of a research design is determined by the ability of the researcher to access the site, build up and maintain a good relationship
with the gatekeepers and participants. A gatekeeper is anyone with the authority to approve access into the study site (de Vos et al, 2011:325). Accessibility to the research setting and the ability of the researcher to establish and maintain healthy relationships and agreements, determines the success of the execution of a design and data collection (Creswell, 2014:43; de Vos et al, 2011:326). The researcher understood this principle hence for community entry she personally submitted the proposal to the District Manager and a letter for permission to utilise the health facilities within his district for conducting a study.

**Entry to the study setting**

After the written permission was granted by the District Manager the researcher proceeded to the Operational Managers of the Community Health Centres, verbally requesting permission to utilise their facilities, giving each a copy of the permission letter from the District Manager. They were all assured of the maintenance of confidentiality without any interruption of their core business activities in their facilities.

- The researcher partially controlled the research setting by explaining to the Operation Managers the dates and times to conduct the studies and by keeping in touch with participants. The researcher is a well-known official in the district and thus in the specified study settings because of her position as an educator and Manager in the nearby College of Nursing. The good relationships exist because of her college students who use such facilities for clinical learning as well as professional relationships at strategic levels of management in the district and province. The researcher’s background provided a good platform for trust by gatekeepers, negotiations and bargaining for using the study sites (Creswell, 2014:43).

### 3.4.2. Population

Qualitative research, just like quantitative research, requires that the population and sampling be described, although the approach and size of samples differ in
both types (Creswell & Plano Clark, 2011:172). According to Burns and Grove (2009:42) the population is all the elements in the study, for instance individuals, objects or substances, which meet the sample inclusion criteria for the study.

The researcher has a responsibility to decide on the appropriate population that could be best represented by the study in which the findings could be contextualised. The target population is the aggregate number of people which the researcher can use to generalise the findings. The target population is further referred to as the entire set of elements or individuals who meet the sampling criteria and the accessible population as the portion of the target population to which the researcher has access (Polit & Beck, 2008:338; Burns & Grove, 2009:343; Creswell, 2014:32).

In the context of this study the target population includes all the mothers who had delivered live babies and were diagnosed as HIV-positive during pregnancy in the Mbombela Municipality of Mpumalanga Province as main participants. This target population was the HIV-positive mothers who were found at the selected CHCs during their clinic visit for child health services within the period of April to July 2014.

The other target population included the significant others of HIV-positive mothers and the professional nurses who were providing child healthcare services to HIV-positive mothers during the period of April to July 2014 in the CHC1 and CHC2. The latter target population was included as a means of data triangulation; hence their data was not separately analysed but included in the data for the main participants. In June 2017 data collection was repeated at the CHC1 using the same interview guide and narratives to explore for possible new data from the study participants. This was important to identify new insights in the data, if any, in view of changes in infant feeding guidelines since 2014.

3.4.3. Sampling and sample
Sampling is the process of selecting units such as people from a population of interest that by studying the sample we may fairly generalise our results back to the population from which they were chosen (Kumar, 2014:1). Chaturvedi (2014:2) defines a sampling frame as the list from which potential respondents are drawn. He further explains the two types of sampling, namely probability and non-probability sampling. Non-probability sampling refers to the selection of participants using non-random procedures like convenience and quota sampling. Each unit usually does not have an equal chance of being selected for a particular study. Various types of non-probability sampling exist and one of them is purposive sampling (de Vos et al, 2011:391-392).

Purposive sampling, also referred to as judgmental sampling, is based on the belief that the researcher’s knowledge about the population is taken advantage of to select the sample members. It is based entirely on the researcher’s judgment because the sample has elements with most representative attributes needed or suitable for the study (Henning et al, 2010:71; Chaturvedi, 2014:1). It is therefore more subjective and is often used when a qualitative researcher wants a sample of experts (de Vos et al, 2011:392; Creswell & Plano Clark, 2011:174-175). Sampling in qualitative research is based on data saturation not size (Burns & Grove, 2009:361), and smaller groups of 4-6 people are ideal.

A purposive sampling approach was used in this study to ensure that only those participants who had relevant attributes and were willing to participate were included in the sample. The researcher therefore selected from the HIV-positive mothers who had come to the child health care services, which combines as a prevention of Mother-to-Child Transmission of HIV clinic, and their significant others. Only those significant others to whom the mothers had disclosed their HIV status were selected in order to protect their confidentiality as an important ethical principle. The mothers’ verbal consent was also obtained to contact their selected significant others. Saturation was reached whereby there were no more new sparks or insights revealed on infant feeding practices (Creswell, 2014:239).

The researcher approached the Operational Managers of the KaBokweni and Bhuga Community Health Centres (CHCs) to identify the days on which they render the prevention of Mother-to-Child Transmission of HIV programme and
child health care services. The researcher then sampled the different participants as follows:

Sampling happened during the months of April to July 2014 following the approval to conduct research from the Manager of Ehlanzeni Health District. The purposive sampling of one set of HIV-positive mothers, their significant others and Professional Nurses was repeated in June 2017 to determine if there were new different emerging insights from the 2014 data. This was important because of the dynamic nature of the HIV infection and periodic revision of infant feeding guidelines since 2014.

- **Professional nurses:**
The list and contact details of professional nurses who provide such services were requested for their invaluable contribution to the study. The Operational Managers shared the clinic days with the researcher and gave a list of all professional nurses as requested. All those who were available on the list, willing to participate, and met inclusion criteria, were utilised since they were just less than ten and had the required attributes for the study.

- **HIV-positive mothers**
All the mothers were individually greeted and checked for their HIV status as they entered the consultation room using their road to health cards, since each one’s status is reflected thereon. There was no interference with their flow of movement to the point of getting assistance from the staff at the Community Health Centre.

The researcher introduced the research topic to each HIV-positive mother who was directed to her, then explained the purpose of the study and determined if they met inclusion criteria. This was done without divulging their HIV status to other clients through one-on-one brief discussions with them, away from the other clients. Each eligible HIV-positive mother was requested to participate in the study individually and privately, without notice of the others to protect her
privacy. Each was further advised that she was free to exercise her right to accept or decline the request. Emphasis was placed on protection of their privacy and that their responses would not negatively affect their relationship with the Community Health Centre de Vos et al, 2011:120).

The eligible mothers who were willing to participate in the study were enrolled without making others aware, thus maintaining privacy and confidentiality. Enrollment entailed capturing the name, surname, physical address and contact details for follow-up. The venue agreed upon with all the HIV-positive mothers was each of the CHCs according to their geographical positions. The dates and times suitable for all were also agreed upon and finalised on follow-up communication.

- **Significant others**

The significant others of each participant were selected through consultation with the mothers from whom information was gathered to determine if they met the inclusion criteria. The mothers were then requested to provide contact details for direct contact with their significant others to invite them for the interviews, which they provided.

The researcher phoned each of the significant others, through the contact details given by the mothers, explained the purpose of the study and requested them to participate. Some of the significant others were invited directly by the mothers who opted to do so themselves; the researcher merely phoned to confirm the time and venue with them.

The purposive sampling allowed for the involvement of all participants who qualified according to the inclusion criteria (de Vos et al, 2011:232).

Burns and Grove (2009:513-514) state that a single contact with participants does not guarantee attendance. The researcher therefore contacted study participants through telephone calls and cell messages to remind them about agreed upon appointments. The researcher paid transport fees for the HIV-
positive mothers and the significant others who needed transport to reach the CHCs for focus group discussions and interviews.

**Sample**

A sample refers to a small portion of the total target population and a simultaneous existence of a population. It comprises a subset of the population which is used for inclusion in the study (Burns & Grove, 2009:42). The importance of a sample is to limit time on a huge population, to make data manageable for the researcher to process, analyse and interpret (de Vos et al, 2011:224). Polit and Beck (2008:339) in support of the above meaning of sample state that a sample is a subset of population elements. According to Webster (2015:1) a sample is a representative part of a single item from a larger whole, a group, especially when presented for inspection or shown as evidence of quality.

In qualitative research data saturation, guides further decision, after which no further data collection and sample are needed (Polit & Beck, 2008:357; Creswell, 2014:239). The sample size is thus adequate once the data saturation level is achieved (Brod, Tesler & Christensen, 2009:1263). Saturation of data occurs once the additional sampling produces no new information (Burns and Grove, 2009:361; de Vos et al, 2011: 391-391).

For this study the focus group interviews were conducted on the HIV-positive mothers and their significant others, until the researcher reached data saturation. In the absence of new insights, the researcher ceased recruiting more participants, hence the total number of HIV-positive mothers who formed a sample in this study for both CHCs was seventeen.

The HIV-positive mothers totalled seven focus groups: two groups had four participants both from CHC1; two groups, one from each CHC, had three participants; and three groups had one participant each, two of which were from CHC2 and one from CHC1. There is a clear indication that it was not easy to have participants available for focus group interviews even after recruits had freely indicated their willingness to participate.
The scenario presented herein indicates clearly that it was not easy to have participants available for interviews even after recruits freely indicated their willingness to participate. Recruited people promised to be available up until the time set for starting the interview sessions, after which they turned off their phones and could not be contacted.

The sample of significant others from both CHCs was eight participants comprising two mothers of HIV-positive mothers, one mother-in-law, two sisters, two spouses and one aunt in different groups. They totalled three groups, two from CHC1 and one from CHC2. The sample of professional nurses had eleven of them, six from CHC1 and five from CHC2. The researcher was guided by saturation to reach the numbers for focus group interviews in which the data collected revealed no new insights (Creswell, 2014:239). The number of professionals was based on those who were available and willing to participate in the study.

3.4.4. Inclusion Criteria

The participants had to meet the following criteria for inclusion in the study:

- HIV-positive mothers with live infants, living in extended families who have disclosed their HIV status;
- Any significant other who lives with the HIV-positive mother, who was willing and gave verbal consent to participate;
- Professional nurses who have worked in a child health clinic for at least six months and therefore have rich data for the study, and were willing to participate in the study.

3.4.5. Exclusion Criteria

The exclusion criteria were as follows:

- The HIV-positive mothers who were not ready to disclose their status;
- Any significant other who was not willing, did not live with the HIV-positive mother and those who did not give consent to participate in the study;
• Professional nurses who did not work in a child health clinic, because they did not have the required data.

3.4.6. Testing of the Data Collection Instrument

Pilot testing means to measure whether the study instrument yields the intended outcome and will work in the real setting. In that way it fine tunes the measuring instrument through comments on the tested instrument for more reliable results (Simon, 2011:3; Schade, 2015:1). Pilot study may be conducted in qualitative studies to reduce the risk of unmanageable problems that may be encountered during data collection and analysis (Ismail et al, 2017:4).

While the pilot study participants in qualitative studies may not be included in the main study, in some cases it may not be possible to exclude them particularly where a sample is small for the main study (Teijlingen, Rennie, Hundley & Graham, 2001:7). Data from pilot study may be included in the main study especially when such data invaluably influences recruitment rates. Teijlingen et al (2001:4) state that researchers should be encouraged to present their report improvements made by pilot studies in their research design and process. The use of pilot study in qualitative studies and inclusion of pilot study data into the main study is further supported by findings of a study done at United Kingdom in 2017, which state that some or all pilot study data may form part of main study (Ismail, et al, 2017:6).

In this study the researcher tested the focus group interview questions on a group of four HIV-positive mothers and two significant others recruited the same way as for the main study. The first ten HIV-positive mothers who qualified and agreed to participate in accordance with the inclusion criteria were recruited but only four were available and used for the pilot test. One of the HIV-positive mothers gave the researcher contact details of her significant others whom the researcher phoned, and they agreed to participate in the pilot test. They further preferred to use their own home on a date and time agreed upon for the focus group interviews.
The study participants were informed about the use of audio-tapes for capturing all the data during the focus group interview sessions. They gave verbal consent for the researcher to use audio-tapes, which were then used for both the HIV-positive mothers and their significant others. One professional nurse, who was the first available at the CHC1 among those who met the inclusion criteria, was recruited and she agreed to complete the narrative as guided in Annexure B for pilot testing.

Following the use of the focus group interview guide for HIV-positive mothers in pilot testing, the researcher restructured the probing questions. The reason for restructuring the probing questions was to simplify and make them clearer, based on the nature of responses given by participants, refer to annexure A for details. There was no change indicated for the narratives of the professional nurses, hence nothing was changed following pilot testing.

Based on the outcome of pilot testing on the significant others, the central question was rephrased to make it more specific. Two of the probing questions for significant others were also rephrased to make them clearer and specific, refer to annexure A for details. The data collected from the participants during pilot testing was rich and informative for the study objectives hence it was included in the main study.

3.4.7. Data Collection

Data collection is the systematic approach used in gathering and measuring information from a variety of sources to address the questions being asked in the study (Creswell and Plano Clark, 2011:171; Wilkepedia, 2016:1). It is a labour-intensive process hence the researcher should clearly indicate every step of the process and write a thorough report on the findings (Creswell & Plano Clark, 2011:177).

- Data Collecting Instrument
A data collecting instrument refers to a device, technique or tool which the researcher may use to collect data from participants. Such instruments include
questionnaires, tests, an observation schedule and an interview schedule, archival documents and audio-visual material (Ndubuka et al, 2013:5). A qualitative researcher as the main instrument who selects the data, observes, takes notes, and decides when to participate and when to just observe, in the case of observation as a method of data collection (Henning et al, 2010:87).

According to Polit and Beck (2008:392) researchers in qualitative research basically collect unstructured or semi-structured self-report data. A variety of approaches may be used to collect data such as interviews, histories, factual incidents, narratives, diaries and journals (Fox 2014:233). Ideally the researcher should use the audio-tapes to capture the data during the interviews to allow for more focus on the interviews (de Vos et al, 2011:359).

Unstructured focus group in-depth interviews were used for data collection from the HIV-positive mothers and their significant others in this study. The audio-tapes were used to capture data thereby allowing the researcher to concentrate on the proceedings of the interview while responses were tape recorded. Audio-tapes also enabled the process of transcribing and analysis to be easy by ensuring that no data was lost. Narratives were also used to collect data from the professional nurses. Other sources of information used were observation and field notes which were gathered during focus groups interview sessions. A total of two central questions were used: one for HIV-positive mothers another for their significant others.

**For HIV-Positive Mothers:**

What are your experiences, as a mother, with regard to decision-making on your choice of infant feeding methods at home; at the health facilities, in the community where you live and with regard to your skills of decision-making?

**For significant Others:**

What are your experiences regarding the choice of infant feeding practices decided upon by your spouse, daughter, or daughter-in-law?
For both focus groups interviews probing questions were asked as prepared in the interview guide; refer to annexure A for details.

An unstructured in-depth interview schedule was used, based on the attributes of Wittmann-Price’s theory of emancipated decision making, to collect data from the HIV-positive mothers and their significant others. The Wittmann-Price theory attributes are: social norms, flexible environment for decision-making, empowerment, personal knowledge and reflection (Wittmann-Price & Bhattacharya, 2008:2472; Wittmann-Price, Posmontier & Bhattacharya, 2013:11).

The researcher first requested from managers at the CHCs a quiet, comfortable and well ventilated room for the focus group discussions. Briefing the participants entailed explaining that the discussion would focus on infant feeding practices used or chosen by them. The HIV-positive mothers were also informed about the time allocation that the focus group in-depth interviews might last between 40 to 60 minutes per group. Furthermore, all HIV-positive mothers were informed that they would each receive an equal opportunity to speak in the group and that all views and experiences expressed were important.

The data was collected using the focus group interview schedule for HIV-positive mothers and their significant others in this study. The researcher used triangulation, facilitating discussion among the participants, to enhance credibility of the study and validity of the conclusions. In qualitative research study triangulation could involve the use of various methods of data collection to understand the truth about the phenomenon being studied and add to the validity of the study (Polit & Beck, 2008:196; Creswell, 2014:251). The researcher conducted focus group interviews, facilitating discussion among participants while observing their behaviour as well as taking field notes and thereby enhancing triangulation.

Data was also collected through the completion of narratives by the professional nurses. The use of significant others and professional nurses to collect more data ensured triangulation of data to support the main data from the HIV-positive
mothers. Through triangulation in which the data was gathered from various points or angles towards the main objectives of the study, a true picture of the phenomenon is attained (Henning et al, 2010:103).

- **Interviews**

An interview is a verbal communication that occurs when the participant provides information as required by the interviewer and as it filters from the interviewee. The interview content ranges from deep emotions and lived experiences to narratives by individuals or groups, or just facts and opinions. Interview is often used in qualitative research and it may be structured, unstructured or semi-structured (Burns &Grove, 2009:403).

Unstructured in-depth interview is often characterised by a grand tour question and additional probing by the researcher as needed, in which the participant completely controls the interview content (Polit & Beck, 2012:12; Creswell, 2014:240). Probing creates an opportunity for a researcher to elicit information that was not forthcoming from participants yet significant for attaining research objectives (Polit & Beck, 2012:14; Gill, Stewart, Treasure & Chadwick, 2008:291-292).

Unstructured focus group in-depth interviews were conducted in this study for HIV-positive mothers and their significant others. A focus group is a group discussion about a certain topic and is also a qualitative technique used for collecting data (Gill et al, 2008:293). It provides an ideal setting for homogenous groups to share their views and experiences in a focussed manner (Dilshad & Latif, 2013:192).

A focus group interview approach was chosen and utilised in this study for the following reasons:

- The researcher needed collective views and experiences of participants and a richer understanding of the infant feeding practices in the context of HIV-positive mothers. In focus groups people provide detailed data about their perceptions, feelings and experiences in their own words especially for sensitive subjects such as that pertaining to positive HIV status.
• The researcher needed the lived experiences of participants regarding the study topic hence the focus group technique was used.
• The use of focus groups, has gained momentum in exposing the needs and problems of marginalised population groups such as the HIV-positive mothers. 

(Dilshad & Latif, 2013:193).

The data gathered from focus group interviews and narratives formed the basis for the development of guidelines to support infant feeding practices of HIV-positive mothers in the Mbombela Municipality of Mpumalanga Province.

• The Interview Process
The unstructured in-depth focus group interview process was conducted in which the researcher asked a central question, followed by probing questions (Polit & Beck, 2008:392). Ideally participants should be put at ease by engaging them in small general talks in preparation for the formal session (Dilshad & Latif, 2013:195; de Vos et al, 2011:371). In support of this notion the researcher firstly engaged participants in general conversation, welcoming them and asking how life was treating them and how they travelled to the CHC, which made them relax.

Following the explanation about the purpose and significance of using an audio-tape recorder during focus group interviews, the participants gave informed verbal consent for its use. The audio-tape recorder was used to capture every response from the participants throughout the focus group interview sessions thus providing accurate data for retrieval during analysis.

The participants for the focus group interviews spoke SiSwati, therefore interviews were conducted in their language as agreed upon with them. An informed written consent for each HIV-positive mothers was obtained following the explanation of what the interview entailed, emphasising maintenance of confidentiality. In a secluded area, at the Community Health Centres the focus group interviews were conducted for all HIV-positive mothers and their
significant others on the agreed upon dates between April and July 2014. Data collection was repeated in June 2017 to identify new insights.

The HIV-positive mothers filled in the demographic particulars on a given template to determine their demographic profiles. The researcher started each session by greeting and welcoming participants, introducing herself and the research assistant to them. Explanation was then given regarding the interview process and how it would unfold throughout, stating that a question would be asked for all to answer each in turn and that no answer is right or wrong. It was emphasised that their views and experiences were important and they should freely express them without any fear of intimidation.

The expectations of the participants and the researcher were shared, which included that participants should respond as honestly and fully as possible, while the researcher captured their responses. The participants were reassured of their confidentiality and freedom to withdraw their participation and to ask for clarity at any point when necessary.

A central question was then posed, after which probing questions were asked, one at a time. Participants were each given an opportunity to respond to each question before the next round of questions until all probing questions were exhausted. Follow-up and further probing were done for each probing question when necessary and as guided by the responses of each participant to elicit deeper knowledge and understanding. At the end of each session a summary was formulated to confirm understanding and gratitude expressed for the information given (de Vos et al, 2011:372; Herodotou, 2016:2).

The researcher paraphrased to ensure the same understanding of what participants expressed as the need arose. Paraphrasing means expressing one’s own mind or idea clearly to make that decision with no external influence (Burns & Grove, 2009:110). Minimal verbal responses were also used such as “Ohh, I see”, to demonstrate alertness and understanding during focus group interviews.
The researcher used the observation skills to observe the behaviour of the participants as they responded to questions to identify other essential cues. Such cues yielded objective information and included sighing, frowning, smiling or even laughing. Cues often support some verbal responses to interview questions (de Vos et al, 2011:372; Ndubuka et al, 2013:6). The interviewer noted and recorded all the information gathered through such observation and recorded them as part of the field notes which were converted into data.

Field notes ideally consist of all recorded real observations which the researcher makes during the interview process (Henning et al, 2010:87). In qualitative research the researcher has to make accurate and systematic notes soon after observation (Creswell, 2014:23). The researcher further gathered field notes by documenting everything that was seen, heard, experienced and thought during the interview (de Vos et al, 2011:335). Such field notes assisted the researcher to synthesise, and complement all the data collected during the interview and help to validate some audio-taped data as supported by Polit and Beck, (2008:405).

The focus group interviews for HIV-positive mothers and their significant others were conducted between April and July 2014 as the permission to conduct research was obtained in March 2014. The narratives for completion by the professional nurses were also distributed and completed between April and July 2014. Since the data was collected in 2014, in 2017 the researcher made an informed decision to collect one set of data from the different participants who meet inclusion criteria for the study. The purpose of collecting the second set of data was to determine if there is any significant new insight in the nature of data collected. This was particularly important considering the dynamic nature of HIV infection, changes in infant feeding guidelines within HIV context and trends in PMTCT (WHO, 2016. The second set of data was collected from the HIV-positive mothers, their significant others and the professional nurse in June 2017 who were recruited in the same process as the first set.

The length of each interview session varied between 40 and 60 minutes because of probing and follow-up for clarity where necessary. The participants preferred to be interviewed at their Community Health Centres to reduce stigma.
from their community and for their convenience and only CHC1 was used as a venue for data collection.

The chosen venues provided privacy, comfort, adequate lighting and less distraction. Eye contact was maintained by the researcher throughout interviews, listening attentively and expressing gratitude for responses given. The researcher was also very patient, sensitive and responsive to the needs of each participant, showing respect throughout the interviews. Participants were encouraged to comment or ask clarity seeking questions at the end of each interview session. Refreshments were served for all participants at the end of each session as a gesture of appreciation for their participation.

The narratives were part of the data collection tools. The selected professional nurses in each Community Health Centre were given blank narrative scripts with questions and instructions to respond to pertaining to infant feeding practices. The time for completion of the narratives was estimated at twenty to forty minutes. The data gathered from the narratives complemented that from the focus group interviews, hence it was included in the main data for analysis.

3.5. DATA ANALYSIS

Data analysis refers to an ongoing, emerging and iterative non-linear process in which data is organised, reduced, classified and described rigorously and systematically (Polit & Beck, 2008:751; Henning et al, 2010:127). Data analysis also involves listening to audio-tapes, integrating field notes, transcribing data, coding the data and then grouping the codes into themes. In coding the data the researcher in this study grouped the elicited views and experiences of the participants into units and named them in order to reflect broader perspectives entailed in each group (Creswell & Plano Clark, 2011:208). The data analysis started when the researcher was gathering data in which the researcher wrote some memos during each interview session and noted frequently mentioned attributes to determine a need to continue data collection.
Qualitative authors have a variety of steps that describe the same process of data analysis hence there is no fixed linear approach for this process (Henning et al, 2010:127; Wikipedia, 2013:1). In the context of this study data were analysed systematically using the Creswell’s integrated steps of data analysis. Creswell’s steps are described by Marshall and Rossman (1999), commented upon by Gibbs (2007) and presented by de Vos et al (2011:403-404) as follows:

- **Planning for recording of data**
  Audio-tapes were provided, checked that they were functioning before use and utilised during focus group interviews to capture data accurately. Note pads and writing pens were provided to write field notes and observation outcomes during focus group interview sessions (de Vos et al, 2011:335). Prepared narrative scripts with additional blank pages were organised to present to the professional nurses to write their narratives as guided. The environment was organised with a ‘no disturbance notice’ at the entrance during interview sessions, to avoid interruptions.

- **Data management and preliminary analyses**
  During the interview sessions, whilst capturing responses using audio-tapes, the researcher observed participants’ non-verbal cues related to and significant to their responses. Notes of observed cues were written in memos to complement interview data (de Vos et al, 2011:409; Henning et al, 2010:106). The researcher kept all the data safely on audio-tapes and these, the field notes and the narratives were kept under lock and key pending their transcription and for safety and security (de Vos et al, 2011:379).

The process of data collection using focus groups interviews was accompanied by preliminary analysis. Preliminary analysis needs a researcher to re-read the data from the interviews and field notes continually to identify and highlight while developing themes (de Vos et al, 2011:359). The researcher did preliminary analysis after each interview session which assisted in checking the saturation of data.
The participants for focus group interviews had responded in SiSwati, which the researcher converted into English for analysis and presentation. Following each focus group interview the researcher repeatedly listened carefully to the tape recorded data then transcribed each one verbatim to make sure that transcriptions are accurate in order to enhance useful analysis. The latter is supported by Polit and Beck, (2008:509) who affirm that researchers should check the accuracy of transcribed data. Lapadar (2000) in Polit and Beck, (2008:509) offers a suggestion on the strategies to enhance transcription rigor, namely:

- Keeping a log of decision points while transcribing, such as what has the transcriber decided not to transcribe?
- Developing a codebook for recording transcription conventions already adopted or created for the project.

The narratives from the professional nurses were transcribed, then themes, categories and sub-categories were developed.

**Generating categories and coding the data**

The primary task of coding is to identify relevant categories by searching for patterns in the data then writing down words and phrases which translate into themes, categories and subcategories (Henning et al, 2010:105; de Vos, 2011:411). The researcher personally transcribed the data and numbered the transcripts from the focus group interviews for both the mothers and their significant others. This was informed by gaining new understanding and alternatives emerged in alignment with the study objectives (de Vos, 2011:416).

Each transcription was first handwritten, after which the researcher typed it. While transcribing, the researcher kept the words verbatim, indicating clearly the research questions then the responses from the participants. Each transcript was then repeatedly read to check if all the information was well captured, then the transcribed data was developed into themes, categories and sub-categories.

The follow-up questions and responses as heard from the tape and seen in the field notes were also indicated during transcription. The researcher became immersed in the data as it was repeatedly read and re-read during the
transcription process, which enhanced the understanding thereof (de Vos et al, 2011:408; Brink et al, 2011:184). Some transcription rules as adapted from Dresing, Pehl and Schmieder (2015:28) were also applied during transcription as follows:

- Transcribe literally by translating dialects accurately into standard language or retaining it if there is no suitable translation. All the data was transcribed without any changes or paraphrasing from Siswati to English for HIV-positive mothers and their significant others.
- Keep the units of meaning intact. Every word was transcribed verbatim without changing its meaning to retain the original meaning of that caption (Henning, 2010:76).
- Indicate pauses by suspension marks in parenthesis. Pauses, sighing and other gestures were captured on field notes and expressed as such to show the extent of the participants’ responses, for example: Eish.
- Capitalise words which need special emphasis. Important words were indicated with bold, rather than capitals, for immediate attention.
- Each speaker’s contribution receives its own paragraph. Each contribution was written in italics to show the contribution of the participants’ and speakers’ expressions which was captured in its paragraph accordingly.
- Emotional non-verbal utterances should be transcribed in brackets. Non-verbal utterances were indicated clearly but not necessarily bracketed.
- The interviewer may be marked by “I” and a participant may be marked by “P”, “F” may also be used for facilitator. The researcher indicated the responses from each participant by the use of letters such as “FGD1 P1” for participant number 1 in focus group discussion (FGD) 1, and so on according to a focus group discussion (FGD) in question.
- Affirmative noises and fillers should be transcribed. All the notes that were gathered including affirmative sounds such as “hmm” were captured to express a particular kind of communication by participants (Dresing, Pehl & Schmieder, 2015:28). The details regarding transcription are indicated in chapter 4.

- Interpreting and developing typologies
Based on the study objectives the researcher interpreted the data as new understandings were emerging, then the guidelines were developed as detailed in chapter 5 (Burns & Grove, 2009:523).

- **Presenting the data**
  The coded data was developed into themes, categories and sub-categories, after which it was analysed and findings were presented as detailed in chapter 4. Similar categories were grouped together and the coded data was properly rationalised to eliminate repetition, in accordance with Creswell’s steps of analysis as detailed in chapter 4.

3.6. BIAS

Bias is defined as a slant away or deviation from the true expected outcome (Burns & Grove, 2009:220). It occurs when a systematic error is introduced into sampling or testing by selecting or encouraging one outcome over others and should be identified and eliminated (Polit & Beck, 2012: 37).

In this study bias was eliminated in that the researcher used the same inclusion and exclusion criteria to select participants for focus group interviews. Bias was also prevented by using bracketing in which the researcher held in abeyance assumptions and previous experiences that she held about infant feeding practices. The researcher assumed impartiality by objectively capturing and transcribing data from participants verbatim, thus enhancing data validity (Tufford & Newman, 2010:83).

To achieve bracketing in this study the researcher delayed the review of literature until after the data collection and analysis. The delay prevented the researcher from the temptation of phrasing the research questions and developing themes that already exists in the literature. It further allowed objectivity in interpreting data and eliminated prejudices on the infant feeding practices of HIV-positive mothers, thus eliminating bias. The researcher operated in alignment with qualitative researchers by identifying areas of
potential bias and minimising their influence through bracketing (Chan, Fung & Chien, 2013:3).

3.7. TRUSTWORTHINESS

Trustworthiness according to Lincoln and Guba (1994) as cited by Polit and Beck (2008:768) refers to a degree of confidence which qualitative researchers develop in their data. Lincoln and Guba (1999) in de Vos et al, (2011:419) proposes four constructs as reflecting true assumptions about ideal qualitative paradigms more accurately than others. The four proposed constructs for assessing trustworthiness are credibility/authenticity, transferability, dependability and conformability, according to Lincoln and Guba (1985) in Fenton and Mazulewic (2008:1). Henning et al, (2010:146) support the argument that the researcher’s findings are worth paying attention to.

3.7.1. Credibility/Authenticity

Credibility deals with answering the question of how congruent the study findings are in terms of reality. Credibility further refers to the confidence in the truth of the data and their interpretations. Researchers should strive to develop this confidence in the truth of research findings (Polit & Beck, 2008:539). Ensuring credibility is said to be an important step in establishing the trustworthiness of the study (Shenton, 2004:64; Creswell, 2014:250).

In this study credibility was achieved by ensuring that the participants were identified and described accurately. Credibility of the findings was maintained in that the views of the participants were well represented in verbatim transcription from captured data. The setting was well described in this study with emphasis on the fact that participants use these settings as their source of primary health services and maternal and child service centre in particular. Such description provided sufficient credibility and validity of the data collected within such settings (de Vos et al, 2011:420).
Lincoln and Guba (1999) in de Vos et al, (2011:420) suggest the various strategies that may be used to increase credibility for qualitative research. The researcher, in this study also ensured credibility in the following manner:

- Adequate time was given; 40-60 minutes spent with participants and debriefing participants before data collection and giving concluding remarks after each focus group interviews session. In debriefing, participants were briefly reminded of purpose of the study and to express themselves freely for all information required to be elicited during focus group interviews.

- Detailed descriptions of the participants were obtained, and the application of other strategies like member checks in which the researcher informed the participants that data collected would form the basis for guidelines development. The participants were also probed for responses that needed such probing to enrich data. Member checking was also done by doing follow-up with the participants as well as validating data during its collection through probing for in-depth information until saturation was reached.

- Triangulation of different methods: Triangulation of data entails using various sources in order to validate conclusions (Burns & Grove (2009:231; Heather, 2015:30). In this study methodological triangulation was used to enhance quality through focus group interviews, collecting field notes and observing participants behaviour during interviews and by using narratives from the professional nurses. The researcher also had prolonged engagement by listening to the tape recorded data repeatedly as the data was transcribed verbatim. The researcher spent some time typing the transcribed data, which further prolonged interaction with the data and thus enabled the researcher familiarity and comfort with the data.

**Authenticity** refers to the extent to which researchers fairly and faithfully show different realities. The study is authentic if it attracts readers to understand lived experiences and become sensitive to raised issues. An authentic text will be
able to convey the feeling tone of the participants as depicted in their mood, feeling, experience, language and context of their lives (Polit & Beck, 2008:540; Creswell, 2014:251).

Authenticity criterion, in this study, was maintained by expressing the verbatim responses of the participants during transcription. It was further maintained as they portrayed their behaviour, as observed during interviews. Such behaviours included sighing and facial gestures that accompanied their responses, as reflected in the transcripts.

3.7.2. Transferability

Transferability refers to the extent to which findings can be transferred or applied to other settings (Creswell, 2014:251). Detailed description of the data will determine whether the study findings are transferable. A description of the data enables consumers to evaluate applicability of the data to other contexts (Polit & Beck, 2008:539; de Vos et al, 2011:420).

The researcher in this study provided a rich, thorough, thick description of the data by transcribing it verbatim from the audio-tape recorder, field notes and narratives (Polit & Beck, 2008:539). The information of infant feeding practices is in demand especially on HIV-positive mothers, hence its transfer for use by others should be automatic whenever facilities access it as guidelines provide for such. The guidelines will benefit the pregnant women as well to improve their infant feeding decisions that further enhance HIV free child survival with adequate support.

3.7.3. Dependability

Dependability refers to stability of data over time and conditions. Lincoln and Guba (1985) in Polit and Beck (2008:539) support this definition by asserting that dependability is reliability of data. An inquiry audit is another technique related to dependability in which data is scrutinised by an external viewer to confirm its stability and the consistency of the findings (de Vos et al 2011:421).
In this study the data is available and accessible, as the participants expressed their views and personal experiences regarding infant feeding decisions and practices. The findings are therefore highly likely to remain stable, considering the conditions prevailing around the challenges and best practices shared during focus group interviews and through narratives.

3.7.4. Confirmability

It refers to the objectivity or neutrality of the data as agreed upon by two or more evaluators regarding its relevance, meaning or accuracy (Polit & Beck, 2008:539; Creswell, 2014:251). An audit trail of all relevant material for the study may be utilised by an independent auditor to determine confirmability and dependability of data (de Vos et al, 2011:422).

In this study confirmability criterion was complied with throughout since the evidence of the study included transcribed interviews, field notes on the observation of participants and data on narratives. The data collected was saved for access to confirm findings as the need may arise as it was audio-taped for all focus group interviews. The completed narratives, consent forms completed by the main participants are all available for use to confirm information when necessary.

3.8. ETHICAL CONSIDERATIONS

In research studies ethical consideration is imperative for rigor and success. Fundamental ethical principles applicable to research exist to guide the researcher, and they include mainly ethical clearance, permission to conduct the study, informed consent, principle of justice, respect for persons and beneficence (Creswell, 2014:132). The fundamental ethical rule in social research is that it must bring no harm, hence researchers should minimise harm and maximise benefits, also called beneficence (Polit & Beck, 2008:170; de Vos et al, 2011:116). Ethical principles form the basis for ethical conduct in research
with emphasis on the protection of human rights. Protection of human rights include confidentiality and anonymity and the right to privacy, (Burns & Grove, 2009:188-189). The following discussion focuses on ethical aspects that have been addressed in this study:

3.8.1. Ethical clearance

The Research and Ethics Committee of the former University of Limpopo, now called Sefako Makgatho Health Sciences University (SMU) granted approval and a clearance certificate (Annexure H) to conduct this study, which marks a significant key for entry into the study setting (Creswell & Plano Clark, 2011:176; Ndubuka et al, 2013:4).

3.8.2. Permission to Conduct the Study

The approval to conduct the study was also granted by the Mpumalanga Provincial Ethics Committee (Annexure I), the Ehlanzeni District Manager (Annexure K) and the permission by individual study participants (Annexures D and E). The permission provides an ethical right for the researcher to access the study participants using the correct route for the purpose of the study expressed and approved by Research Ethics Committees.

3.8.3. Informed consent

All HIV-positive mothers and significant others provided written informed consent by reading and signing a consent form designed by the researcher, before participation in the study. The consent form stated that participation involves information sharing on their experiences with no potential physical harm (Flanagan, Greenfield, Coad & Nellson, 2015:2). The participants in human research studies may give verbal informed consent for situations in which the signature might compromise privacy and where research study involves minimal or no risks (Shahnazarian, Hagemann, Aburto & Rose, 2017:10). The professional nurses gave verbal consent to participate in the research study and their completion of narratives, which bear almost no risk, further confirmed their consent to participate. Explanation of the purpose and benefits of the study was
given verbally to all participants to ensure comprehension as a basis for informed consent (Burns & Grove, 2009:203; Heather, 2015:32). It was further explained that participation in the study was voluntary so participants were free and they had a right to withdraw at any phase of the research process. Explanation was also given to the study participants that withdrawal from the study would not incur any undue disfavour on them.

### 3.8.4. Principle of Justice

The principle of justice holds that participants should be treated fairly and equally, therefore participants should be selected based on their compliance with the inclusion criteria and not merely manipulated because of availability (de Vos et al, 2011:116-117; Muller & Bester, 2016:111). In this study the participants included people who were eligible according to the inclusion criteria and they expressed their willingness to participate following a thorough explanation of the implications of their participation. This was compatible with the sampling technique and inclusion criteria described earlier. Participants were periodically reminded of their freedom to withdraw from participation, thus eliminating the element of forced participation and exploitation.

### 3.8.5. Respect of Persons

Prospective subjects, as autonomous agents, have a right to self-determination and freedom to conduct their lives as they choose, make decisions and are capable of controlling their destiny (Burns & Grove, 2009:189-190; Polit & Beck, 2008:171-172; Muller & Bester, 2016:110). To uphold this principle, the researcher informed the participants about the purpose of the study. A written informed consent was obtained accordingly, after allowing them the freedom to accept or decline participation. De Vos et al (2011:117) support the notion that every subject should be respected and given the opportunity to have informed consent for participation, which should be handled safely to enhance the ethical quality of the research (Refer to Annexures D and E).

### 3.8.6. Right to Confidentiality and Anonymity
Confidentiality means that only the researcher and possibly some few designated individuals should be privileged to have the identity of the participants and commit themselves to confidentiality. Anonymity implies that no one should be able to identify any subject afterwards and link it to his/her response (de Vos et al, 2011:120). Researchers have an ethical responsibility to always protect anonymity and maintain the confidentiality of data from the research participants to enhance the integrity of the study (Burns & Grove, 2009:197; Panel of Research Ethics, 2016:7).

The researcher protected anonymity in this study by keeping the data without the names of the participants and by instructing the participants not to write their names on the narrative documents. During the focus group interviews anonymity is not always possible, however, names of participants were not used and there was no mention of their HIV status by the researcher (Brink et al, 2011:34). Confidentiality was maintained by not mentioning the participants’ names during the focus group interviews which were audio-taped, and on narratives. Furthermore, access to data captured from the participants was restricted in accordance with the legislative framework as outlined in the Constitution of the Republic of South Africa, Promotion to Access of Information Act, 2000 and the National Health Act, 2003. No one will have access to the study data without the legal permission to do so to ensure compliance with the Charter of Human Rights (Panel of Research Ethics, 2016:6).

The informed consent indicated that the information on the study would be made available in the form of research findings, theses and publications but that no participant names would be mentioned to maintain anonymity. The university supervision team and other authorised officials will have access to the information under the control of all guidelines for the maintenance of confidentiality and anonymity.

3.8. 7. Right to Privacy
In social sciences research studies like this one, privacy is somehow encroached, however, the following stance against encroachment on privacy should be taken by all researchers:

- In this study audio-tapes were used to capture data and the participants were informed before the start of focus group interviews that audio-tapes would be used. They were further reassured that no names would be mentioned for confidentiality purposes.

- All possible means of protecting privacy should be applied. In this study focus group interviews were conducted in a secluded room used for child health services, hence there was no stigmatisation attached and no access to other people. The separate room that was used for focus group interviews provided privacy for participants who were not accessible to anybody but the researcher.

- In all aspects enhance negotiation with participants. Negotiation regarding the venue, dates and times of the focus group interviews was done with all participants. Flexibility was applied for each group to suit all those who wanted to participate in terms of days as well. Negotiations that took place demonstrated respect of and cooperation with participants (de Vos et al, 2011:121).

3.9. CONCLUSION

The research design and method have been described in this chapter, as well as measures to enhance trustworthiness and ensure ethical rigor. The measures of eliminating bias through bracketing were addressed as well as attention to ethical considerations. The next chapter, chapter 4, will focus on data analysis, interpretation and literature control.

CHAPTER 4

DATA ANALYSIS, INTERPRETATION AND LITERATURE CONTROL
4.1. INTRODUCTION

This chapter describes the analysis, interpretation and presentation of the data obtained from the interviews and narratives that were conducted in April to July 2014. Another set of data was collected in June 2017 to determine new insights different from the data collected in 2014. The researcher made an informed decision to collect the second set of data based on the dynamic nature of HIV infection in the context of infant feeding, trends in Prevention of Mother-to-Child Transmission of HIV with changes to improve Infant feeding guidelines since 2014 (WHO, 2016:1). The 2017 focus group interviews yielded similar data, hence there was no change effected. However, some expectations and recommendations from professional nurses’ data were added. The data is presented in the form of themes, categories and sub-categories as well and literature control of the data is contained herein. The findings, which relate to the study objectives and questions that guide the study are also presented in detail.

4.2. DATA ANALYSIS

Data analysis in qualitative research is an on-going iterative process of transforming data into findings by reducing the volume of raw data, sifting and identifying significant data patterns and constructing a framework to transform data into findings (de Vos et al., 2011:395). Description is the basis of data analysis, in which data is broken down and then classified into meaningful themes, categories and sub-categories (Henning et al 2010:128). The process of coding includes developing, finalising and applying the code structure and it begins in the data collection phase (Bradley, 2006:1762).

Creswell’s process of data analysis as described by Marshall and Rossman was used for data analysis in this study (de Vos et al 2011:403). Creswell’s process of data analysis consists of steps which are presented in a linear form, but which were applied in circles and sometimes overlapped. During data collection preliminary analysis was done to elicit some emerging hunches that might
follow-up, hence the steps are more spiral than linear (de Vos 2011:405). The study utilised the data analysis steps as described in chapter 3.

In this study a total of seven groups of HIV-positive mothers participated in the focus group (FG) interviews. Two groups had four participants both from KaBokweni CHC; two groups had three participants, one group was from Bhuga CHC and one from KaBokweni CHC. Three groups had one participant, two of which were from Bhuga CHC and one from KaBokweni CHC. The HIV-positive mothers who participated in the focus group discussions totalled seventeen. An additional set of focus group interviews conducted in June 2017 yielded no new data as there were no new insights elicited.

For the significant others there was a total of eight participants from both CHCs, comprised of two mothers of HIV-positive mothers, one mother-in-law, two sisters, two spouses and one aunt in different groups. They totalled three focus groups; two from KaBokweni and one from Bhuga CHC.

The sample for professional nurses had eleven participants, six from KaBokweni CHC and five from Bhuga CHC. An additional data set of narrative forms was handed to two professional nurses in June 2017 to determine the presence of new insights, but only one completed form was returned. The views, expectations and recommendations presented in the June narratives mainly had similar responses. However, a few different expectations and recommendations elicited were added to the initial data.

The transcripts were coded in an open coding manner in accordance with the steps as described in chapter 3 (Burns & Grove 2009:520; Dresing, Pehl & Schmieder 2015:28). Henning et al (2010:131) assert that data are broken down into discreet concepts and categories hence significant patterns of data were identified and assembled into categories.

The profile of the participants was presented in tabular form in table 4.1, then the interview and narrative findings were provided thereafter. The research questions for the mothers and significant others had been augmented after the
first focus group in-depth interview for testing data collection instrument was conducted. The augmentation of some sub-questions involved a breakdown thereof, which allowed for a clearer search for the required information, refer to annexure A.

Table 4.1: Demographic profile of the mothers recruited to the study (N=17)

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>CHARACTERISTIC</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>20-25</td>
<td>04</td>
<td>24%</td>
</tr>
<tr>
<td></td>
<td>26-30</td>
<td>09</td>
<td>52%</td>
</tr>
<tr>
<td></td>
<td>31-35</td>
<td>04</td>
<td>24%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
<tr>
<td>Highest school grade</td>
<td>0-10</td>
<td>03</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>11-12</td>
<td>14</td>
<td>82%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
<tr>
<td>Number of children alive</td>
<td>0-1</td>
<td>06</td>
<td>35%</td>
</tr>
<tr>
<td>(per person)</td>
<td>2-3</td>
<td>11</td>
<td>65%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
<tr>
<td>Age of last born child</td>
<td>0-6 months</td>
<td>07</td>
<td>41%</td>
</tr>
<tr>
<td></td>
<td>7-12 months</td>
<td>07</td>
<td>41%</td>
</tr>
<tr>
<td></td>
<td>13-18months</td>
<td>02</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>19 and above</td>
<td>01</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
<tr>
<td>Person who stays with baby</td>
<td>Self</td>
<td>13</td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td>Self and my parents</td>
<td>02</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>Self and my spouse</td>
<td>01</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td>Self, mother &amp; sister</td>
<td>01</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
<tr>
<td>State of employment</td>
<td>Unemployed</td>
<td>16</td>
<td>94%</td>
</tr>
<tr>
<td></td>
<td>Employed</td>
<td>01</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>100%</strong></td>
<td></td>
</tr>
<tr>
<td>Source of water supply</td>
<td>Tap</td>
<td>17</td>
<td>100%</td>
</tr>
</tbody>
</table>
### Profile of the HIV-Positive Mothers

In view of the subject under study the participants were all females for the focus group interviews of HIV-positive mothers. A total of seventeen HIV-positive mothers were interviewed. The majority of the participants (n=14; 82 per cent) had passed senior secondary level at school and therefore had a good literacy level and the potential to understand and master infant feeding health information and counselling.

The literature attests to the fact that infant feeding practices are associated with education and socio-economic status, in which case those who are educated and socio-economically better-off have healthier feeding practices (Fadnes et al 2009:12; Williams et al 2016:120). However, in a study done by Ella et al (2016:108), despite high levels of literacy and possession of the correct knowledge, the participants did not adhere to correct infant feeding practices.
The majority of participants (n=9; 52 per cent) were aged below 30 years and the youngest was 21 years. The age profile implies that the participants were of child bearing age and actively involved in sexual activities with their risk such as HIV transmission. The majority of participants (n=11; 65 per cent) had more than one child and the highest number of children they had was three. Based on the age profile, it is imperative for the HIV-positive mothers in this study to execute measures to eliminate Mother-to-Child-Transmission of HIV infection during the infant feeding practices. When the number of children is more than three, which the majority of participants have, it signifies a wide experience on infant feeding in order to provide rich data.

The fact that the majority of HIV-positive mothers (n=16; 94 per cent) were unemployed, would indicate that they stayed at home full time with their infants, yet only 35 per cent (n=6) were breastfeeding. Those who opted for formula feeding had a risk of running out of formula milk unless they had other sources of regular milk supply, thus subjecting their babies to inappropriate infant feeding practices and the inherent effects.

The Tshwane Declaration of August 2011 for the support of breastfeeding in South Africa and the 2010 WHO guidelines specify that all HIV-positive mothers should breastfeed their infants (du Plessis, 2013:4). The practice of participants as reflected in the profile contradicts such a declaration, hence a need to provide facility-based guidelines to support the infant feeding practices of HIV-positive mothers. The study conducted in KwaZulu Natal in 2016, almost five years after Tshwane Declaration of 2011 revealed some progress, in breastfeeding for the first six months of life, however a lot still needs to be done especially on capacity building (du Plessis, Peer, Honikman & English, 2016:9)

All participants had access to tap (safe) water and electricity, which is an advantage for the HIV-positive mothers who opted for formula feeding. The infants on formula feeding are therefore less likely to suffer from water-borne diseases and cold related sicknesses in view of safe water and electricity for fuel. The majority (85 per cent) of participants spoke SiSwati and all of them (100 per cent) had a religious affiliation. Such a profile formed the basis for their
faith and beliefs, which impacted on their decision-making about infant feeding practices.

- **Significant Others**
  A total of eight significant others (seven females and one male) participated in the focus group interviews. They comprised of one male spouse, three mothers of the HIV-positive mothers, one aunt, two sisters and one mother-in-law. They were all staying full-time with the HIV-positive mothers and their infants and so had an influence on infant feeding practices and therefore had the potential for rich data for the study.

- **Narrative for Professional Nurses**
  A total of eleven professional nurses, all females, completed narratives anonymously; six were from KaBokweni CHC and five from Bhuga CHC. The longest serving professional nurse had fourteen years of experience in the community health centre and each had more than six months practicing in a child health care unit. This period denotes a potential for rich data based on the experience of these professional nurses.

The verbatim responses of HIV-positive mothers and other participants were given labels, after which a number was attached to identify a serial number in that category as follows: FG1 for a focus group one; P2 for a study participant two; SignO1 for Significant other number 1 and Pr 3 for Professional nurse number 3. The interview data from taped records and narratives were transcribed verbatim and translated from SiSwati to English as the participants were interviewed in SiSwati.

The data analysis culminated in the grouping of data into two main themes, namely:
- HIV-positive mothers’ experiences on infant feeding decisions and practices;
- Recommendations made by healthcare workers to enhance safe infant feeding practices.

The table 4.2. depicts the two themes, their categories and the sub-categories.
The main themes were further divided into categories and sub-categories in order to substantiate the findings. The verbatim quotes are indicated in italics, and are used as narratives to express the experiences of the participants. Theme 1 with its categories and sub-categories is presented in the box and discussed as follows.

### 4.2.1. Theme 1: HIV-positive mothers’ experiences on infant feeding decisions and practices

<table>
<thead>
<tr>
<th>THEME</th>
<th>CATEGORY</th>
<th>SUB-CATEGORY</th>
</tr>
</thead>
</table>
| 4.2.1. HIV-positive mothers’ experiences on infant feeding decisions and practices | 4.2.1.1 Socio-cultural practices | • Cultural influence  
• Limited independence  
• Fear of stigmatisation  
• Environmental influence |
|  | 4.2.1.2. Health worker related challenges | • Limited access to infant feeding support  
• Judgmental attitude |
| 4.2.2. Recommendations made by healthcare workers to enhance safe infant feeding practices | 4.2.2.1. Needs-based health programmes | • Increased access to one-on-one and ongoing counselling;  
• Relevant stakeholder involvement  
• Improved capacity building strategies |
|  | 4.2.2.2. User-friendly infant feeding information guidelines | • Confidence in decision-making  
• Compliance with decisions made  
• Mother-centred information guidelines |
4.2.1. THEME 1: HIV-POSITIVE MOTHERS’ EXPERIENCES REGARDING INFANT FEEDING DECISIONS AND PRACTICES

The experiences of HIV-positive mothers on infant feeding decisions and practices emerged as the first theme. Socio-cultural factors, among others, played a pivotal role in influencing decisions on infant feeding practices (Aishat, Dairo & Gidado, 2015:15). Some of the expressions made on the cultural influence on the infant feeding decision were as follows:

**FG 2 P3:** “No cultural influence: I gave breastfeed because breast milk is always there, warm, protected and therefore prevents access to flies. With breast I can express if going away whereas with bottle feeding, I need to have at least four bottles and that is costly”.

**FG 5 P3:** “No culture but I chose bottle because I thought breast will cause a problem of HIV transmission when baby started scratching the mouth”.

**FG 6 P2:** “Culture said you must not breastfeed the next baby if it follows one who died, but you must breastfeed the next one, hence I chose bottle feeding”.

Theme 1 is sub-divided into categories and sub-categories as presented in the following discussion:

4.2.1.1. Socio-Cultural Practices

Socio-cultural practices were identified as one aspect influencing the infant feeding practices of HIV-positive mothers. Iwelunmor et al (2014:4) state that culture plays a vital role in determining the level of health of the individual, family and community. They further mention that the knowledge of socio-cultural
factors may facilitate efforts that are applied for PMTCT. Aishat et al (2015:15) state that practices sometimes emanate from the influence of people who reside around one. In this study some participants expressed that culture influenced them to make infant feeding decisions, while others stated that culture did not guide their decisions. Cultural factors and inconsistent messages remain a barrier to optimal infant feeding practices as echoed by a study done by Mnyani, Tait, Armstrong, Blaauw, Chersich, Buchmann, Peters and McIntyre (2017:8). The identified barriers may be addressed through accurate and consistent messaging on safe infant feeding practices for all women ante and post-partum.

Some of the statements suggesting socio-cultural factors influencing their decisions are as follows:

**FG 2 P1:** “Some guided us at clinic telling us how good breastfeeding is and how formula is then I chose it”.

**FG 3 P3:** “No culture; I bottle fed since discharge from hospital for six months”.

**SignO P2:** “Because of sickness my daughter decided to use bottle: what she revealed to me is ‘mom, I think I must stop breast and use bottle because I’m not right and I want to go to work.’ At clinic they said she is HIV-positive and gave them classes such as they must care and give baby clean bottle and clean water”.

- **Cultural Influence**

  Street and Lewallen (2013) define culture as beliefs and traditions that are passed on by family and friends and by neighbours. Some women expressed that culture influenced them to make their infant feeding choices. They believed that breastfeeding is a natural protection from diseases. Another group of mothers stated specifically that culture had no influence on their decisions for infant feeding practices. A study done in sub-Saharan Africa (2005) revealed that breastfeeding is culturally normative, and so it is practiced as a method of choice (Thairu et al, 2005:7-8).
The implication of the findings of this study is that a decision to choose breastfeeding is prescribed by the culture as a norm that babies should feed on breast. The mother is left with no room to practice her independence and this limits her emancipative rights. Wittmann-Price and Price (2014:8) confirm the influence of social norms on decision-making. They state that the phenomenon of social influence impacts on women’s decision-making and produces their oppression.

In this study the participants expressed nil to limited cultural influence for their choice of infant feeding practices. They indicated that their choice was based on factors which include knowledge acquired from the health facilities.

The participants verbalised that culture did not influence their decisions as follows:

**FG1, P1:** “At home and at baby’s dad there’s no culture/nothing done about culture”.

**FG4 P1:** “No culture influenced my choice of bottle feeding except anger”.

**FG3: P1:** “Culture plays no role, I made the choice myself. I chose bottle (feeding) because if I get piece job it will be a problem if I come home late, breastfeeding will be difficult as other babies don’t want bottle feeding once they started with breastfeeding, hence I chose bottle feeding”.

**FG5 P1:** “No culture at home, but I chose bottle because I told myself that if I get a job it might be difficult to change from breast as other babies cannot stand both”.

**FG4 P1:** “Me, when I was pregnant I had challenges with my husband, so I wanted him to feed his child, have pain and me to go to work and leave him with his child. I was angry hence I chose bottle feeding. Along the way he (husband) lost work, I stayed with him with two kids, getting a grant, I had problems. I regretted my decision because I would not have had problems like asking my family to buy bottles, which is not good to make others responsible for my problems”.

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FG2 P1: “Nothing on culture. At baby’s family they breastfeed, and the father prefers it, they all prefer breast.”

FG5 P3: “No culture, but I chose bottle because I thought breast will cause a problem of HIV transmission when baby started scratching mouth”.

FG6 P3: “Culture, says nothing. I chose bottle because I was working and had no time for breast as I was working, baby stayed with its granny”.

Pr2: “There is less cultural influence on decision making”.

FG2 P2: “No cultural influence; I gave breastfeed because breast milk is always there, warm, protected and therefore prevents access to flies”.

The participants who expressed that culture influenced their decision-making verbalised it as follows:

FG6 P1: “Culture said you must not breastfeed the next baby if it follows one who died, but you must breastfeed the next one, hence I chose bottle feeding”.

FG3 P1: “At home culture expects me to breastfeed and I do”.

FG2 P4: “At home I was told that I must give baby solids, their culture is that the babies of this family eat a lot so must be given solids immediately after birth not after six months”.

FG 3 P1: “Culturally it is breast milk that is the best method of choice”.

Pr 1: “Culturally black people know about breast feeding even to practice it”.

Pr 3: “Some family members believe in ancestors and use of herbs; they can force the mother to breastfeed because of their culture”.

Pr 8: “To a large extent culture plays a role in their decision-making; at times they take common practices to be more of culture guiding their practices, some are myths, but they practice them anyway”.

Pr 9: “Culture plays a major role as women are seen as inferior”.

There was very minimal influence from cultural beliefs and practices on the infant feeding decisions of the HIV-positive mothers in this study. The mothers
displayed awareness of social norms, which included family traditions of breastfeeding versus formula feeding their infants. Some mothers expressed these traditions yet took a firm stand of respecting and complying with their decisions on their choice of infant feeding practices.

The literature confirms that in Africa neither EBF nor ERF is the norm, however, in a study done in South-western Nigeria in 2008, the women who opted for EBF had more than 80 per cent compliance rate at six months. The latter was achieved despite the ‘hostile’ cultural environment which did not support EBF (Adejuyigbe et al, 2008:308). On the contrary, in a study done in the rural communities of Cross River State in Nigeria in 2013, there was very low practice of exclusive breastfeeding because of employment challenges (Ella et al, 2013:108). In another study done in Tanzania in 2016 it is reported that EBF uptake is generally low because of a misconception that it is for HIV-positive mothers only (Maonga et al, 2016:87).

In conclusion, culture came up as one factor that influences the infant feeding decisions, however the role it played was limited to mere knowledge of its existence. Only a few study participants associated it with their infant feeding decisions and practices. There was no impact of such knowledge since the mothers were concerned more about prevention of Mother-To-Child Transmission of HIV from infant feeding. This finding resonates well with the one done in 2010 in which the major factor influencing infant feeding decision was the desire to reduce mother-to-child transmission (Oladokun, Brown & Osinusi, 2010:1109; Zulliger, Abram & Myer, 2013:1553).

• Limited Independence.
Modiba and Sewnunan (2014:42) state that the majority of the mothers depend on family members, partners or social grants for survival. Doherty et al (2006:2425) also mention that one mother was forced and nearly hit by her mother for not breastfeeding. Ostergaard and Bula (2010:220) also indicate that grandmothers influence decisions around breastfeeding. Such interference of
significant others limits the independence of the participants to make and sustain their own infant feeding choices.

In this study the participants expressed interference by their family members who force them to do as they please. This left the participants deviating from the safe infant feeding practices. Some participants managed to maintain their decisions, others yielded to family pressures due to their dependence on them. The findings in this study contradict the research report from a study done in KwaZulu-Natal (KZN) in 2008. In that study it was reported that the decision for mothers to feed their infants something other than breast milk was mainly their own, and there were no external influences (Ghuman, Saloojee & Morris, 2009:78).

The participants in this study had different experiences from the above-stated 2008 KZN study and they expressed that the family influenced them to mix feed as follows:

**FG5 P3:** “At home I told them not to mix feed, they disregarded it and gave glucose water saying they clean the baby as it’s not on breast”.

**Pr 10:** “They develop inferiority complex and fear”.

**FG1 P4:** “Because if I give milk alone the baby refuses bottle feed, my mother said I must give fine porridge meal called ‘inembe’, fine maize porridge for babies, although it causes obesity”.

**FG6 P4:** “I was working, I’m HIV-positive. Baby’s father found my baby unwell and the grandmother then bought medicine and gave my baby, they forced me to mix-feed, yet the clinic said I must exclusively milk feed and I decided to do formula feeding”.

**FG4 P2:** “At home they gave my baby “inembe” (fine maize porridge for babies) but I did not tell clinic that I mix-fed for fear of scolding by nurses; instead I told them that I was exclusively formula feeding”.
**FG4 P2:** “When I asked about baby’s constipation, ‘mamkhulu’ (my mother’s sister) said I must give Phillips, saying i-clinic ‘injalo’ (is like that) say no other feed, but I must give medicine despite that”.

**FG6 P2:** “At home: they force me to feed solids saying it is their culture, but I insisted to do what I was taught at the clinic, exclusive milk feeding for six months”.

The participant who was exclusively breastfeeding changed to formula feeding because of her family pressure and this was verbalised as follows:

**FG6 P1:** “My spouse said I must bottle feed to protect the baby against HIV transmission”.

**FG4 P2:** “My mother gave me epsom salts for ‘inyongo’ and I was then forced to stop breastfeeding and to start giving formula feeding, using bottle and that assisted me to stop breastfeeding which was difficult to do as I didn’t want to explain my condition”.

**FG3 P1:** “When I changed my aunt complained of the cost of formula and tried to force me to breastfeed but I told her that my mother-in-law stopped me so I won’t”.

**FG1 P3:** “I felt pain to change from breast when I got work far from home, more so because all at home breastfeed; I was the only one to bottle feed due to work pressure”.

**FG7 P2:** “I thought my breasts are too small then I changed to bottle feeding without being prepared”.

The choice of infant feeding practices can be hindered or supported by various pressures and influences that some mothers experience (du Plessis, 2013:4). The family pressures were revealed by a study conducted in Eastern Uganda (Fadnes et al, 2009:10). In that study the mothers wanted to practice exclusive replacement feeding but could not do that due to socio-economic pressures resulting in unintended decisions (Fadnes et al, 2009:10). Such pressures limit the independence and interfere with the freedom to express the choice of infant

A similar experience was revealed in this study in that some participants made their choice based on the work-related pressures and family influences as follows:

**FG 2: P2** “I chose bottle feeding because I was working far from home, also my spouse did not tell me that I must stay away from work, and then I had opted to bottle feed or else I would have chosen breast. If I knew I would stay at home, as an HIV-positive mother. If I knew that my spouse would allow me to stay with my baby and not take transfer I would have chosen breastfeeding”.

**FG6 P2:** “Initially I was scared of family talks about my choice but became free when my mom-in-law supported my choice or else I would be forced by family. However I would not yield but rather leave them”.

**FG3 P3:** “I chose breast feeding because I could not afford the milk formula as I was not working”;

**FG5 P1:** “I chose to feed on the bottle because I told myself that if I get a job it might be difficult to change from breast as other babies cannot stand both”.

**FG5 P2:** “I decided to give milk formula so that if I get work I do not have a problem”.

**FG6 P3:** “I chose bottlefeeding because I was working and had no time for breast as I was working, [and] my baby stayed with my mother”.

**FG2 P3:** “I chose bottle because I was working far from home. Also my spouse did not tell me I must stay away from work and then I had opted to bottle feed, or else I would have chosen breast if I knew I would stay at home as I am HIV-positive”.

**FG3 P1:** “I like breastfeeding a lot but due to work I chose bottle”.

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Limited independence in infant feeding decision-making was one feeling that participants expressed in this study. Independence in making informed decisions was limited by the pressures from both family and health care workers. The mothers were then compelled to yield to family pressures for fear of rejection and maltreatment. Oladokun et al (2010:112) and Zulliger et al (2013:1553) assert that despite adequate counselling the infant feeding choices made will depend on influence from the spouse, family and community. The increasing family pressures to mix-feed also limited the mother’s independence to adhere to a chosen infant feeding practice (Doherty et al, 2006:2424; Ellis, 2013:14).

- **Fear of stigmatisation**

  Oladokun et al (2010:1111) reported that stigmatisation is the major factor that influenced infant feeding choice. Its greatest pressure is experienced during the traditional naming ceremony in Nigeria where breastfeeding is the norm. The mothers stated false reasons for formula feeding in fear of stigmatisation (Oloruokooba et al, 2016:87). Aishat et al (2015:15) state that for fear of stigmatisation some mothers practiced exclusive breastfeeding.

  In this study participants expressed the difficulties that they encountered in practicing their infant feeding choices, which exposed them to stigmatisation. One participant explained her dilemma of divulging her HIV status to her baby sitter so that she could provide appropriate infant feeding practices. She had to keep her status secret to avoid stigmatisation by people who are close to her, including her baby sitter.

  The above-stated findings are similar to those reported from a study done in five African countries including South Africa in 2006. It was reported that the participants did not disclose their HIV-positive status for fear of being rejected by friends and families as was happening to those who disclosed it (Kohi, Mokoae, Chirwa, Holzheimer, Phetlhu, Uys, Naidoo, Dlamini & Greef, 2006:408-411; Lazarus, Struthers & Violari, 2013:6).
The participants in this study verbalised the similar experiences that the participants did not disclose their HIV status for fear of rejection and stigmatisation as follows:

**FGD1 P1:** “…as friends talking together, friends say I must not breastfeed because I will lose weight, but I insisted on breastfeeding”.

**FG2 P3:** “I wanted to divulge to my sister-in-law, but my spouse discouraged me saying they will become negative to me once they know my status, so only my mother and spouse know my status”.

**FGD3 P2:** “People in my community talk a lot. For me, my choice is fine because of my (HIV) status, it’s fine for bottle feeding that I chose because my status wants me to exclusively milk feed. So, keeping my baby with my neighbours forces me to talk about my status but my community knows my (HIV) status though I don’t need to tell them, some know.”

**FG2 P2:** “His sister asked me why I give bottle-feed but I said it’s problems but I did not divulge, so I continued to bottle feed”.

The participants also expressed these words suggesting stigmatisation by the friends, saying the following:

**FG3 P1:** “Friends say you are sick without asking, if you give bottle feed”.

**FG3 P2:** “Friends say you have ‘three-series’ when you bottle feed and you are just hiding, tracking, it from them”.

**FG4 P2:** “My friend also said they will see what happens after six months, they also ask why I’m not giving baby solids, but I told them that I do what I was taught to do”.

**FG7 P1:** “The friends say if you bottle feed you are sick, you track but hide sickness, such as HIV-positive status”.

**FG2 P3:** “…it’s not easy as friends conclude that if you bottle feed you are HIV-positive”.
Social stigma remains a serious threat to emancipated infant feeding decision-making for HIV-positive mothers (Mnyani et al, 2017:7). A cohort study conducted in KwaZulu-Natal, South Africa, in 2002, asserts that in a breastfeeding normative community, choosing formula feed exposes one’s HIV status (Thairu et al, 2005:5). Accurate and adequate information sharing by healthcare workers is one essential solution to the elimination of this stigma from HIV-positive mothers, hence a need for infant feeding guidelines.

The fear of stigmatisation became one phenomenon which contributed to improper infant-feeding decision-making by the HIV-positive mothers. Some mothers went to the extent of not involving their significant others and community with a view to concealing their HIV status, to avoid stigmatisation. In some instances, there are mothers who had to change the chosen infant feeding method from formula to breast feeding instantly for fear of stigmatisation (Doherty et al, 2009:2424; Ellis, 2013:14).

- **Environmental Influence**

Street and Lewallen, (2013:13) state that environmental factors rank among the most frequently mentioned influences on breastfeeding decisions. Such factors include, but are not limited to economics and education. Arora, McJunkin, Wehrer and Kuhn, (2000:2) report that the mothers would have chosen breastfeeding if they had adequate knowledge and skills. Prenatal classes, magazines, books, television and support from maternal grandmothers were specified as ideal media for acquiring infant feeding knowledge and skills (Ella, Ndep & Akpan, 2016:108).
In this study inadequate education and information were also associated with an inability to make emancipated infant feeding decisions and the following were some of the expressions made by the participants regarding this:

FG1 P1: “I don’t know whether I should continue with breastfeeding once I give solids because I’ve not been told. I want to know what food to give after six months”.

FG1 P2: “I need just guidance, for example what else to feed the baby now that it is about to stop milk feeds, anything that I need to know”.

FG2 P3: “When baby is six months, I need to know what first solids to give”.

FG2 P4: “I personally don’t give solids before six months, I still need more knowledge from the clinic on what to give at six months”.

FG3 P1: “I need to know more how to prevent the problems of bottle feeding such as constipation and diarrhea”.

FG3 P2: “To advise me whether I can stop bottle any time after six months”.

FG3 P3: “Ah…a…I need guidance, now that my child is one year and grows well and wants to stop breastfeeding, on when to stop breastfeeding”.

FG4 P1: “…sighing I feel free but not sure what to do after six months”.

FG4 P3: “If at clinic they can teach us more about infant feeding; to prepare for us information on what to feed baby at what age”.

FG5 P2: “Eish…clinic gives us no support; they need to call us on quiet days like Saturdays to teach us many things as we are on treatment”.

FG6 P4: “I Want to know whether after six months I must stop or mix-feed. I will start cerelac after six months, but I’m not sure what then to feed the baby whether I must stop breast or mix feed and continue breast or what. This is the help that I need”.

FG6 P1: “I’m not sure what to feed more after six months; not sure how often I must feed baby especially at night”.

FG5 P2: “I need them to give me knowledge on baby care; how to count formula when preparing baby feeds”.

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Pr 3: “The mothers I am working with have little knowledge to make decisions in spite of the information imparted to them by health workers as health education on a daily basis”.

Some narratives that were completed by the professional nurses stated that some HIV-positive mothers have knowledge to make decisions while others lack knowledge and are hindered by their significant others. They verbalised their views as follows:

Pr 2: “Ninety per cent of mothers have knowledge and do make decisions”.

Pr 4: “Most mothers have the knowledge to make decisions”.

Pr 5: “HIV-positive mothers are given information on how to feed their infants. Even though they are given information on how to feed their babies, some lack information”.

Pr 7: “They have enough information and knowledge as they are taught at ANC”.

Pr 8: “The mothers I am working with have little knowledge to make decisions in spite of the information imparted to them by health workers as health education on a daily basis”.

Pr 9: “Unable (the mother) to make decisions which will empower or add matter to her life”.

Pr 10: “Mothers got information”.

Pr 11: “A lot of knowledge”.

Iwelunmor et al (2014:18) state that the support provided by family members influences the adherence to infant feeding choice. Young et al (2010:2031) also highlights that in Tanzania the mothers-in-law commonly made infant feeding decisions for their daughters-in-law. Similar experiences in which family members such as mothers-in-law influence infant feeding decisions were expressed by the participants in this study as follows:
**Pr 2:** “Some family members they believe in ancestors and traditional healers, such as herbs. They can force the mother to breastfeed because of their culture, they don’t believe in health issues”.

**Pr 2:** “May be afraid of the in-laws about their (infant feeding) choices”.

**Pr 7:** “She feels as if she has made the wrong decision if her mother-in-law is not involved”.

**FG2 P1:** “Laughing, Hmm, it is not easy to change because my mother-in-law who supports me influenced the choice of feeding method that I made”.

**FG2 P3:** “My mother at home told me that breast is good and is a medicine”.

**FG4 P1:** “My family bought bottles that I must use when baby feeding”.

**FG5 P2:** “Since my big aunt had influence she instructed me to bottle feed and nobody disputed, and it worked for me”.

**FG5 P3:** “My mom said breast is fine for six months and I had no problem exclusively breastfeeding”.

**FG6 P4:** “Baby’s father found my baby unwell and the grandmother then bought medicine and gave my baby. They forced me to mix-feed, yet the clinic said I must exclusively milk feed”.

Fadnes et al (2009:10; Lazarus et al, 2013:8) also report that economic reasons prevent exclusive replacement feeding and forces the mothers into exclusive breastfeeding choices. The participants in this study indicated some economic reasons that influenced their decisions as follows:

**FG3 P1:** “I felt pain to change from breast when I got work far from home, more so because all at home breastfeed and I was the only one to bottle feed due to work pressure”.

**FG 5 P3:** “I gave breast because I could not buy formula since I am not working”.

**FG 1P1:** “I feel well on my choice because I was forced by work far from home”.

**FG 1 P2:** “I was not working, so I decided to breastfeed until I get the work”.
**FG 6 P4:** “I am happy with breast and wanted to feed for two years, but I stopped at six months to protect baby because I was working and could not afford to continue”.

The participants expressed the need to strengthen their support with regard to infant feeding decisions and practices as follows:

**Pr2:** “Continue reinforcing them not to change their choices easily”.

**Pr3:** “Continue reinforcing them not to change their choices easily”.

**Pr4:** “All HIV-positive mothers should be provided with information to make informed decisions”.

**Pr 5:** “Family members must show compassion, caring, loving and support to the affected and infected mother”.

**FG1 P4:** “Since I leave my baby with the neighbour I need them to feed the baby the way I instruct them”.

**FG2 P2:** “…to provide me with something to help me buy formula when the baby is over six months”.

**FG5 P1:** “…to have someone to assist me to prepare my feed. This will allow me enough time with baby and to get enough milk”.

**FG6 P3:** “I need my family to love me and show me the way, also to help me get the right food as a breastfeeding mom”.

**SignO1:** “We need to help buy formula and any other food to make the baby healthy like Nestum and Purity”.

The participants expressed dichotomous views about the type of support received from health facilities. The clinic was the main facility referred to. Some stated that there is no support received while others mentioned the support given at the clinic. They verbalised available support as follows:

**FG2 P1:** “Eish… at clinic they say we must feed milk exclusively for six months because mixed-feeding causes stomach problems”. 
FG2 P3: “They say I must not give too much food because my baby is overweight”.

FG3 P1: “When we come to clinic they say we must do exclusive milk feeding for six months as it helps protect baby from HIV and other infections”.

FG3 P3: “At clinic they ask me how I care for baby, clean bottles, prepare feeds and I tell them step by step. They also say I must not make too much bottle feed because the baby must finish each bottle meal prepared at a time because it causes some problems if milk stays for a long time after preparation”.

FG2 P3: “I can add saying clinic must teach us on quiet days e.g. Saturdays because the clinic days are short for teaching as many don’t have enough time to ask. It will assist many to learn enough to support, like those on treatment”.

FG4 P1: “Telling us how important breast is; it’s easy to use, no luggage is needed in breastfeeding, unlike in bottle”.

FG5 P2: “Clinic told us how to care for feeding bottles, to feed for six months, take care of baby, wash with soap and water before feeding the baby”.

Sign O2: “We won’t make her stop breastfeeding until we know we can afford formula, more so she is still not working”.

Sign O3: “At the clinic they say she must breastfeed for six months. We will do what the clinic says i.e. breast milk only, nothing else for six months”.

The participants who expressed inadequate or absent clinic support verbalised it as follows:

FG1 P1: “No help, they, at the clinic only ask how the baby is feeding on”.

FG1 P3: “At well baby clinic I was not taught anything about baby feeding except to be asked: how do you feed your baby?”.

FG2 P2: “Me, I last got information on feeding when I was pregnant. At this baby clinic nothing has ever been taught to me since I started (now baby is nine months)”.
FG2 P3: “Nil, (laughing)… except weighing the babies. Truly they weigh, give follow-up date then let us go. I can’t even ask a thing about infant feeding because I am not asked”.

FG3 P1: “There is no help, though they asked what I give to the baby, they give no help”.

FG5 P1: “Nil except when I ask something from them. We just weigh babies and go, no help”.

FG6 P2: “Me, since birth (baby is nine months old now) I have never got any information from clinic on infant feeding”.

FG6 P4: “…Nil that I can remember, except weighing the babies, except a question: ‘udlani,’ then given return date”.

FG6 P3: “At child clinic there is no help received except weighing of baby and being asked a question, ‘how is the baby feeding’”.

The findings in this study are contrary to the report from the study done in South-East Nigeria in 2012 on infant feeding practices. The report from that study revealed that mothers had a very high knowledge of exclusive breastfeeding, but did not practice it (Ella et al., 2016:108). In this study there is inadequate capacity as some mothers expressed that they were not taught at the clinic (Onah, Osuorah, Ebenebe, Ezechukwu, Ekwochi & Ndukwu, 2014:7). In a study conducted in sub-Saharan Africa, (Fletcher, Ndebele, & Kelley, 2008:319-320) women also expressed low levels of self-efficacy and capacity to make infant feeding decisions. The latter prevented execution of safe feeding practices.

In summary, the influence of the environment was apparent from the participants’ responses manifesting through the reaction of the neighbours to infant feeding practices. The environment is capable of channeling the mother to a particular infant feeding decision to comply with what the environment values, not her own choice.
The influence of various significant others with conflicting instructions and comments form part of this environment. Consideration of what appeals to significant others and community at large caused fear to disclose HIV status thus engaging into practices that they do not agree with (Sibeko et al., 2009:1986; Modiba & Sewnunan, 2014:42).

4.2.1.2. Health Worker Related Challenges

Health worker related challenges were identified as one area that hinders safe infant feeding practices in this study. Such findings are echoed by Lazarus, Struthers and Violari (2013:4) who attest that there is inadequate counselling knowledge and skill among healthcare workers, hence the poor infant feeding practices. Young et al (2010:2031) also express that improper infant feeding practices emanate from a lack of standard messages given by the healthcare team. The team includes counsellors, healthcare workers, friends and the media.

The following statements indicate the identified need for specific standard infant feeding messages:

**FG2 P2**: “Clinic needs to provide separate time so that they can teach us, can even use peer group teaching by volunteers or support groups”.

**FG4 P3**: “If they can teach us more about infant feeding; to prepare for us information on what to feed baby at what age, such as Danone or bodybuilding food that is balanced”.

The challenges related to healthcare workers emerged as one category and it reflected limited access and judgmental attitudes to infant feeding practices as discussed below. Babirye et al (2009:342) assert that there is poor quality and an inadequate quality of infant feeding counselling and further noted that there was no demonstration done on formula milk preparation. Bil et al (2008:161) support the need for healthcare workers to give adequate feeding information; hence it is important to adequately train them (Lazarus et al, 2013:4).

Du Plessis (2013:4) also states that the clinic staff is a major source of infant feeding information. Based on the latter statement, it was concluded that health worker training be strengthened for safe infant feeding practices, hence the
importance of infant feeding guidelines (WHO, 2016:27). The healthcare workers, including counsellors, should be capacitated on strategies to be applied to eliminate stigmatisation of HIV-positive mothers including judgmental attitudes (Salvador and Bolivia, 2009:3; Dadhich, Kumar & Suri, 2013:21).

Limited Access to Infant Feeding Support

All participants in this study had access to safe water and electricity. Although formal assessment for legibility of AFASS was not carried out, they need a supportive environment, such as adequate counselling, education and support from all stakeholders to ensure a HIV-free generation (Saloojee, Gray & McIntyre, 2011:10; Mnyani et al, 2017:7).

Formula feeding and breastfeeding were the only methods that participants said they were taught to choose from, yet there are other infant feeding options. Other options include heat-treated breast milk, animal milk and wet-nursing, which they could be educated about (WHO, 2016:8). This requires a wider scope of education and counselling for HIV-positive mothers and relevant support for them to make informed decisions (Laar & Govender, 2011:1). Provision of information and use of multiple channels to educate counsellors and caregivers have proved to be effective for infant feeding support (UNICEF, 2012:15).

At the clinic the participants in this study felt that there is no infant feeding help, especially after delivery, as reflected in their responses. Some participants stated that most of the time the clinic staff would ask them what the baby was feeding, then give them a return date. Others said that the clinic staff would just weigh their infants then give a return date. Some mothers in this study felt satisfied with their decisions basically because of the support displayed to them in the form of finances for buying milk formula and social grants as a source of income. Disclosure and support are closely associated with successful optimal infant feeding (Sibeko et al, 2009:1987; Mnyani et al, 2017:6).

Participants who received some support made the following utterances to express their views:
FG1 P1: “They taught me how important breast is. They taught me also that breastfeeding is good because there is no burden to carry bottle luggage and they guided us on choosing either bottle/formula or breast and we chose according to what we want, what is good”.

FG1 P2: “I get help: my aunties keep buying my needs, they buy milk formula for my baby, they encourage me not to sit alone, they buy porridge, maize for porridge, they buy me clothes, ‘shakes head’ to say nothing else”.

FG2 P3: “Family supports me by caring for my baby if I’m busy”.

FG3 P3: “They also encourage me not to stay stressed saying I am ill; they also talk to me to keep me occupied, help me not to think a lot on my status also family relatives encourage me to mix and talk with them”.

FG6 P1: “Mine is very supportive, buys formula such that I don’t run out of it”.

Despite the support from spouses on their choice of infant feeding practices some mothers encountered a lack of support from their families when initiating formula feeding, which forced them to switch to breastfeeding (Cames et al, 2010:257; Modiba & Sewnunan, 2014:42). The opposite was also true in some cases like in another study done in Tanzania (2010). In that study the mother-in-law made decisions for a breastfeeding daughter-in-law to introduce family foods, irrespective of the existing latest guidelines on exclusive milk feeding (Young et al, 2010:2031). The family pressures interfere with support for independent decision-making which the HIV-positive mothers need so much (Ella, Ndep & Akpan, 2016:108).

This is what some of the participants said about the limited and lack of support for their infant feeding decisions and practices:

FG2 P4: “At clinic there is insufficient knowledge due to short time, so they should keep teaching us more on infant feeding”.

FG2 P1: “Nil. They ask at the clinic what the baby feeds on and give vaccines. They don’t ask anything about what the baby feeds on”.

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FG2 P2: “No support is obtained from my family because my mother has no support”.

FG6 P1: “They simply encourage me to care for baby without specifically helping physically; ‘gesture showing desire to talk’… because I stay with my in-laws they don’t know my status except my spouse, hence they don’t give specific support”.

FG6 P2: “No help received because community has no confidentiality and fear of being discriminated by them, so they don’t know my status”.

Insufficient support and lack of counselling for the mothers on infant feeding practices was among concerns elicited in the responses of the study participants. Among the other reasons, insufficient time and absence of health education talks by healthcare workers on infant feeding practices were associated with this limited access. Absence of health information on infant feeding practices to guide decision-making emerged as a significant concern among participants who desire this so much.

Availability of guidelines on specific infant feeding information could resolve elicited concern. The study conducted in Burkina Faso (2009) attests to positive outcomes from information sharing. In that study it is clear that the mothers become satisfied and develop self-confidence when furnished with relevant information that enhances good infant feeding practices (Hiwot et al, 2014:925). They consider psycho-social support through counselling as an essential predecessor of positive attitude, versus judgmental attitude, to decision-making, which is also supported by other studies (Cames, Saher, Ayassou, Cournil, Meda & Simondon, 2009:259; Ella et al, 2016:109).

- Judgmental Attitude

The plea for a non-judgmental approach is evident in the statements uttered by some participants in this study. The genuineness of such a plea is echoed in the study that was conducted in Ibadan, Nigeria, which revealed that the main factor that influenced infant feeding choice was stigmatisation (Ndubuka, Ndubuka, Li, Marshall & Ehiri, 2013:4). Stigmatisation undermines a person’s integrity, leading to low self-esteem, depression and compromised body immune-response, hence
stigma must be addressed (Oladokun et al, 2010:1111; Ndubuka et al, 2013:4). This calls for the capacity building of counsellors and healthcare workers on strategies that could eliminate the stigmatisation of HIV-positive mothers regarding infant feeding practices.

In another study mothers felt stigmatised on the replacement feeding choices because of the traditional practice of breastfeeding in their communities and families. This feeling was worse during a traditional naming ceremony where they would be frowned upon if not breastfeeding. In that study the mothers were obliged to give false reasons for not breastfeeding, for fear of stigmatisation as a result of HIV infection (Oladokun et al, 2010:1111; Ndubuka et al, 2013:4).

Friends and families tend to display judgmental attitudes, thus instilling some stigma and discouraging mothers from adhering to their infant feeding methods of choice (Ndubuka et al, 2013:5). Various studies recommend a better quality of counselling to increase adherence to exclusive infant feeding practices (Ukpe, Blitz, Hugo & Theledi, 2009:337). Such attitudes therefore undermine the purpose of the counselling efforts. The participants in this study expressed the following views about the friends and families towards their infant feeding practices:

**FG1 P1:** “It’s not easy as friends conclude that if you bottle feed you are HIV positive”.

**FG2 P2:** “Someone who is HIV-positive advised me to breastfeed because it is cheap”.

**FG3 P4:** “Friends are not happy when I bottle feed because they say breast milk is important for the baby to grow”.

**FG4 P1:** “My friend indirectly says if a person feeds bottle she is positive”.

**FG5 P2:** “At home, I told them not to mix feed, they disregarded it and gave glucose water saying they clean the baby as it’s not on breast”.
FG6 P1: “Spouse complains that bottle feeding is a long-standing installment so he is not happy that I’m bottle feeding”.

Some community members display a negative attitude to HIV-positive mothers as a way of discriminating against them. Such attitudes result from insufficient knowledge about HIV-positive status and infant feeding (Modiba et al, 2014:42). The participants in this study presented their views on the reaction of community members towards their infant feeding practices.

In this study the participants expressed dissatisfaction with the behaviour of healthcare workers towards their infant feeding practices, which limited their capacity to make informed infant feed decisions. The following are some of the statements made by the participants with regard to such dissatisfaction:

FG1 P2: “No help is given by the clinic except weighing the baby and a question, ‘what do you feed your child on?’”

FG2 P2: “Again why I don’t know I come to the clinic because at clinic they teach us nil but just they check weight, write down and ask nothing”.

FG2 P3: “Sometimes at clinic they don’t even weigh our babies, they ask for age, write down and give return date”.

FG4 P4: “On feeding, clinic has not specified types of solids”.

FG5 P1: “Just asking what baby feeds on then write date and give immunization without any other help”.

FG5 P2: “Clinic told us how to care for feeding bottles; to feed for six months; take care of baby; wash with soap and water before feeding the baby”.

FG6 P1 “No classes at baby clinic on infant feeding”.

The above statements display hidden attitudes which manifests as limited information sharing on infant feeding to HIV-positive mothers who need it most. Openness to information sharing might be a doorway for mothers to express psychological challenges. This could assist to provide the mothers support and eliminate stigmatisation by health workers.
The various studies conducted in Southern African countries revealed that socio-cultural norms promote mixed-feeding and this emanates from serious pressure from significant others to introduce other fluids and solids within six months of life (Maonga, Mahande, Damian & Msuya, 2016:85). Stigmatisation remains the greatest challenge predisposing to mixed-feeding as the mother fears replacement feeding in a breastfeeding community (Oladokun, Brown & Osinusi, 2010:1113; Oguta, Omwega & Sehmi, 2017:14). The efforts to facilitate adherence to safe infant feeding practices should take into consideration the support available for the HIV-positive mothers in order to assist them to comply with guidance given (Schafer et al, 2015:8).

It became apparent that education on infant feeding practices for HIV-positive mothers should be a priority in any child healthcare service, hence the development of the infant feeding guidelines in this study. The use of infant feeding guidelines would enhance non-judgmental attitudes and improve informed decision-making by HIV-positive mothers on infant feeding practices (Lazarus et al, 2013:4).

The health workers were perceived as being judgmental in that they looked down on some normative practices to which the mothers are subjected. Such perceptions culminated into feelings of stigmatisation, thus a lack of confidence in decision-making and maintenance (Ellis, 2013:13). This undermines a person’s integrity leading to low self-esteem, ultimately depression and compromised body immune-response (Oladokun et al, 2010:1111). The counsellors need to be capacitated on strategies to be used to eliminate stigmatisation of HIV-positive mothers and to encourage non-discriminatory infant feeding dialogues (Salvador & Bolivia, 2009:3; Lazarus et al, 2013:14).

The discussion on theme 2 is based on the data that is presented in the following box, which depicts the theme, its two categories and six sub-categories.
4.2.2. Theme 2: Recommendations made by the healthcare workers to enhance safe infant feeding practices

| 4.2.2.1. Needs-based health programmes | • Increase access to one-on-one and ongoing counselling  
• Relevant stakeholder involvement  
• Improved capacity building strategies |
| 4.2.2.2. User-friendly infant feeding information guidelines | • Confidence in decision-making  
• Compliance with decisions made  
• Mother-centred information guidelines |

4.2.2. THEME 2: RECOMMENDATIONS MADE BY THE HEALTH CARE WORKERS TO ENHANCE SAFE INFANT FEEDING PRACTICES

The recommendations made by the healthcare workers to enhance safe infant feeding practices emerged as a second theme. The mothers have a right to make decisions concerning infant feeding practices. In light of such a right, it is essential to provide adequate counselling to the HIV-positive mothers on various infant feeding options to assist in choosing what is best for them (Fadnes et al, 2009:6 and 12; Lazarus et al, 2013:4). The recommendations gathered from the narratives by the professional nurses were consolidated and analysed, and they yielded theme two with its two categories and six subcategories as reflected in the following discussions.

Some of the expectations of the professional nurses were actually the recommendations to enhance effective infant feeding practices indicated in the following statements:

Pr 1: “The positive mothers should have sound knowledge in order to make proper decisions”.

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Pr 6: “Counselling must be done properly; they must be healthy, positive living e.g. life style modification; they must go to the clinic to do follow-up; antenatal clinic, blood results; do physical exercise; both parties must be tested”.

The importance of counselling is supported in the study done in Abuth in 2016 where it is recommended that all health services for HIV positive mothers effective counselling should be provided by trained health professionals for correct infant feeding decisions(Olorukooba et al, 2016:88).

4.2.2.1. Needs-based Health Programmes

A recommendation was made for the provision of healthcare programmes that will enhance infant feeding practices, based on identified needs of HIV-positive mothers. The identified needs were, among others, a need for sharing of infant feeding information, for support and for improved strategies to share such information, as discussed hereafter (van Dyk, 2012:288-289; WHO, 2016:6). A recommendation was made for love, compassion, caring positive attitude and respect as part of the support to be provided to HIV-positive mothers to enhance infant feeding practices.

The following statement expresses the recommendation for love, compassion and positive attitudes as essential values to enhance infant feeding practices:

Pr 7: “Family members must show compassion, caring, loving and support to the affected and infected mother”.

Pr 10: “Mothers’ feelings should be always considered when making decisions”.

Pr 9: “Woman should be educated about certain factors which will badly influence their decisions”.

The health programmes which are based on the needs of the mothers emerged as one area to receive attention, as discussed below. There was expressed the need for increased empowerment of healthcare workers to enable them to share specific infant feeding health information. Depending on expressed and felt needs of the mothers and their significant others, healthcare workers also need to utilise improved strategies for the delivery of health information.
All individuals have needs and wants even the HIV-positive mothers possess them, as expressed by the participants. They mentioned a variety of items that indicated their needs and wants. Needs are those items indispensable for life, whereas wants are those items that are desired but not indispensable for survival (Huffstetler, 2017:1). This calls for women-centred programmes which would specifically address their needs and wants in support of their infant feeding practices as illustrated in a study conducted in sub-Saharan Africa (Fletcher et al, 2008:321; Lazarus et al, 2013:7).

- **Increased Access to One-on-One and Ongoing Counselling;**
  The need for one-on-one and on-going counselling is apparent in the responses given by participants in this study, to provide adequate infant feeding information. The mothers expressed the need for capacity building to understand the importance of, and make their own decisions on, infant feeding practices. This calls for all healthcare Workers to have clear, meaningful and uniform infant feeding guidelines, and implement such guidelines for PMTCT including antenatal counselling (Lanktree et al, 2010:387; Ndubuka et al, 2013:4).

  The community health workers have a responsibility to support infant feeding practices of the HIV-positive mothers. Support could be offered through ongoing counselling, encouraging good practices and teaching the HIV-positive mothers on their feeding decisions and practices (UNICEF/WHO, 2015:9).

  The need for increased access to one-on-one and ongoing counselling is expressed in the views and expectations of the Professional Nurses as follows:

  **Pr 1:** “HIV-positive mothers must disclose their HIV status to trustworthy people in order to receive appropriate one-on-one counselling”.

  **Pr 2:** “Woman should be educated about certain factors which will badly influence their infant feeding decisions”.

  **Pr 3:** “Community must be advised to participate in everything concerning infant feeding”.

  **Pr 4:** “Mothers should have adequate skills to make infant feeding decisions.”
**Pr 5:** “Ongoing education must be done”.

**Pr 7:** “To continue with health education and counselling and support to allow her to make the right infant feeding decisions”.

**Pr 8:** “Ongoing counselling should be done”.

The psychological challenges encountered by HIV-positive mothers, which include stress, anxiety and their consequences need to be addressed to support their infant feeding practices and decision-making (Ella et al, 2016:108). In addressing the challenges of HIV-positive mothers it is imperative to determine their specific needs first in order to base their support on such needs, such as love and acceptance (Dyk, 2012:288; Lazarus et al, 2013:7).

The needs such as love, and acceptance are echoed in the expressions made by the participants as follows:

**FG4 P2:** “Need my family to love me and show me the way, also to help me get the right food as a breastfeeding mom; help me get healthy food; not want to be too nagging”.

**FG2 P1:** “(Laughing and saying), Eish..: I need help because if one day I’ve no money for example, I ask my mother to help me if money is not enough as formula is expensive”.

**FG3 P1:** “H...mm---H Mm: I need clinic just to guide me, now that my baby is grown up; how long I need to feed, when to stop breastfeeding and to tell me anything else that I need to know about baby feeding”.

In one of the studies done by du Plessis (2013:2) it was stated that the healthcare workers were a major source of information on infant feeding. It was further stated that in other studies done in Mpumalanga, Western Cape and KZN, most mothers used the information given to them to make infant feeding decisions. However, in those studies, the mothers gave vague information
regarding specific help given to them by the clinic staff. Similar findings were made in one study conducted in the rural District of Uganda in 2009. In that study counselling was insufficient and there was also no demonstration of correct preparation of formula feeds to the formula feeding mothers. The heavy workload on counsellors and health worker shortage were some of the factors responsible for this problem (Babirye, Nuwaha and Grulich, 2009:342; Maonga et al, 2016, p.85).

In this study the participants also expressed inadequate infant feeding information from the healthcare workers, as follows:

**FG2 P3:** “Here at clinic they teach us at child health on this and that”.

**FG3 P2:** “Clinic also told me to give baby medication as guided for PMTCT but nil on infant feeding so far has been taught by clinic”.

**FG4 P1:** “There is no help from clinic, though they asked what I give to the baby, they give no help”.

**FG5 P2:** No help is given now from clinic except to be weighed and given return date.

**FG6 P4:** “No classes at baby clinic on infant feeding”.

One-on-one counselling arose as an aspect to be addressed. In view of counselling being inadequate, as expressed in the responses of the study participants. The participants felt that the group health talks do not reach out to each one of them to address specific infant feeding needs, especially on their sensitive HIV-positive status (Oguta et al, 2017:8).

- **Relevant Stakeholder Involvement**

The National Department of Health, South Africa introduced the Infant and Young Child Feeding Policy in 2013. This policy recommends that the mothers, both infected and uninfected with HIV should exclusively breastfeed their infants during the first six months of life then introduce adequate, safe and appropriate complementary food at six months (National Department of Health (NDoH), 2013:14). Some studies conducted in Malawi in 2010 indicated that paternal grandmothers are important decision-makers with regard to the timing of the introduction of solid foods to infants (Qstergaard & Bula, 2010:215).
The value of involving various stakeholders such as breastfeeding support groups, counselling and the teaching of the specific skills in infant feeding decisions cannot be overemphasised (Ellis, 2013:14). This was supported by a study that was done in Uganda in 2010 in which it was found that most of the situations of early cessation of EBF were improved by demonstrating correct positioning of the infant on the breast (Lanktree et al, 2010:386).

In a study conducted in Nigeria in 2008, it was found that more counselling of the mother before delivery would enhance sustainable infant feeding decisions (Adejuyigbe et al, 2008:308; Ella et al, 2016:108).

In this study some significant others expressed considerable support for infant feeding practices, expressed as follows:

Sign O1: “I provide her with food so that she may be able to care for the baby even though I am not working. If she runs out of formula I ask my brothers and they buy the feed. I also try what I can and give her to buy formula”.

Sign O1: “With me I tell my daughter to feed the baby well not to make her hungry, starting in the morning by 08:00, I make sure that the baby is eating”.

Sign O2: “I help my daughter to prepare food, buy formula if I afford, give the samp, soup that we eat”.

Sign O3: “I provide her with maize meal for preparing baby’s feed; and the general home food to be available for her to have energy to care for the baby, as everybody needs such strength for work to be done”.

In a study conducted in Eastern Uganda, the health staff and counsellors revealed that HIV-positive mothers received up-to-date counselling and information on infant feeding. In that study there was a clear impression that nutrition was emphasised during such counselling sessions. (Fadnes et al., 2009:6 and 12; Lazarus et al., 2013:7). That report contradicts some of the responses of participants in this study in that the participants stated that there was insufficient infant feeding information received from the clinic staff.
The participants, in this study, further stated that there was less nutritional help received from community members. Some participants indicated that they would not seek help from community members as this would compel them to disclose their HIV status to many people. Disclosure of their HIV status would subject them to negative consequences such as discrimination and rejection.

A similar concern was expressed by some significant others to whom the HIV status was not disclosed by the HIV-positive mothers. Despite this reluctance to disclose their HIV status, some participants expressed the need for community involvement and support in their infant feeding practices as follows:

**FG2 P1**: “Eish…” *Community must help us not criticize us due to our HIV status, but to support us to assist where we need direction so that we don’t feel rejected or useless as some of us feel so.”*

**FG2 P3**: “Community-neighbours, if caring for my baby, may mix feed so I don’t involve them in baby feeding”.

**FG5 P1**: “(sighing), if neighbours should help bath me, cook e.g. porridge when I’m helpless so that I can drink antiretroviral (ARV’s)”.

**FG5 P3**: “Community members who know our secret of HIV status should assist us; May help even by giving food such as pap, when I have none in my house, more so I stay with males who are not always around”.

**FG6 P2**: “Depending on how used I am to my community members, for instance, they can feed anytime when baby cries for food”.

The findings on this study reflected the need to involve other stakeholders to address issues of support and non-judgmental attitudes for HIV-positive mothers (Lazarus et al, 2013:4). The relevant stakeholders could include breastfeeding support groups and community interest groups with experience in appropriate infant feeding, counsellors, and PMTCT programme coordinators. There is a need to develop open-ended systems of information sharing and counselling for HIV-positive mothers to enhance reception and understanding (Lazarus et al,
A teaching manual or specific guidelines may be provided or taught to each HIV-positive mother thus increasing access to uniform information on infant feeding (Ndubuka et al, 2013:4).

- **Improved Capacity Building Strategies**

According to the studies done in an urban township outside Bloemfontein, Free State Province, clinic staff members are a major source of infant feeding information. The author of this study therefore concludes that special attention should be directed to appropriate training of health workers to provide the necessary information (du Plessis, 2013:5).

The need for capacity building is supported by the findings of another study in which several recommendations were made for breastfeeding support. Such recommendations included counselling that should be done on breastfeeding with scheduled home visits for follow-up, and identifying mothers with problems for early detection and prompt intervention (Bunik et al., 2006:6; Oguta et al, 2017:8). The mothers had the following to say about the support that they needed from the health facility staff for their capacity building:

**FG2 P2:** “The clinic must provide separate time so that they can teach us, can even use peer group teaching by volunteers or support groups”.

**FG3 P1:** “I need to be taught how to continue feeding baby based on the method chosen already”.

**FG4 P1:** “I need to be reminded (by clinic) about what food to give to the baby, how often, what food to build body for baby till baby is three years. We are not getting that information because time is too short.

**FG6 P1:** “I want to know whether after six months I must stop or mix-feed”.

**FG7 P2:** “I will start Cerelac after six months, but I’m not sure what then to feed the baby whether I must stop breast or mix feed and continue breast or what. This is the help that I need”.
The need for healthcare workers to be supported is clear as revealed in the research study done in Uganda (2010). In that study it was mentioned that healthcare workers should be given support with updated training and use of guidelines in accordance to the circumstances of each mother (Lanktree et al, 2011:387). This signifies the need for appropriate training of health workers on specific information to be included for infant feeding guidance, as evident in the findings of these studies (du Plessis, 2013:4).

The infant feeding guidelines developed in this study provide one example of capacity building strategies to enable healthcare workers to provide specific information to HIV-positive mothers to ensure their efficient support. The improved capacity building strategies emerged as one aspect that is necessary for effective sharing of health information on infant feeding practices. Necessity of effective information sharing emanates from the scanty information received by the mothers with many unanswered questions regarding infant feeding practices.

One of the strategies that could be effective would be the use of EBF peer counsellors, which was used successfully in Tanzania (Maonga et al, 2016:85). The need for mothers’ support and capacity building cannot be over-emphasised (Ellis, 2013:14). This was supported by the UNICEF journal on nutrition in which it is stated that public health programmes for protection, promotion and support of breastfeeding can have major benefits for HIV-positive mothers and their children (UNICEF, 2015, :2).

**4.2.2.2. User-Friendly Infant Feeding Information Guidelines**

User-friendly infant feeding information guidelines form part of the recommendations made by some participants of this study. Such guidelines relate to the enhancement of confidence in decision-making and compliance with infant feeding practices. The information guidelines constitute relevant
information necessary for effective and appropriate infant feeding decisions and practices in HIV-positive mothers as discussed below.

The need for relevant infant feeding information was echoed by participants as indicated in the following statement:

**FGD3 P3:** “At clinic there is insufficient knowledge given due to short time, so they should keep teaching us more on infant feeding. Special classes, especially before starting pills, will help a lot and the clinic must do this to help many to comply with intake of pills. Eish... At clinic they say we must feed milk exclusively for six months because mix-feeding causes stomach problems, so we must give solids at six months”.

**FG5 P3:** “Clinic gives me no help for feeding, except just asking what the baby feeds on then write date and give immunization without any other help. No help is given now from clinic except to be weighed and given return date”.

**FG6 P4:** “At child clinic there is no help received except weighing of baby and being asked a question how is the baby feeding ‘udlani umntwana’; No classes at baby clinic on infant feeding”.

Evident in the findings of this study was the need to develop specific infant feeding guidelines to direct information sharing for healthcare workers and counsellors. The mothers need the capacity to understand importance of and make own informed choice on infant feeding practices. This calls for all health workers to have clear and meaningful guidelines and be prepared to use such guidelines for standardized information and guidance on infant feeding for HIV-positive mothers (Lanktree et al, 2010:387; Ndubuka et al, 2013:4).

- **Confidence in Decision-Making**

The HIV-positive mothers need to be confident and maintain infant feeding decisions made in order to find value in such decisions, hence a need for infant feeding counselling to the HIV-positive mothers (Hiwot, Silassie, Mirutse, Desta & Amare, 2014:2014:925). In this study some mothers expressed a lack of confidence regarding their choices, citing various reasons for such feelings. Such lack of confidence was manifested through fear of unknown outcomes,
such as being unsure of how long to exclusively milk feed and what will happen after stopping it.

Some mothers had a dilemma to convince their family members, including spouses and mothers-in-law, as to why they made their choices or to yield to their advice for fear of blame and judgment (Ellis, 2013:13). The dilemma was attributed to inadequate counselling and support on their infant feeding choices.

The participants in this study expressed their experiences regarding satisfaction and confidence in relation to their infant feeding decisions and practices, as follows:

Pr 5: “Support groups must be formed to help them”.
Pr 6: “Breastfeeding groups must be formed to assist them”.
Pr 7: “To teach mother-in-law to allow her to take own decisions”.
FG1 P2: “I was free, what bothered me was mixing the milk formula”.
FG4 P1: “For me breast choice assisted me because I did not have money, but am not informed how long to breastfeed coz because clinic did not tell me”.
FG5 P2: “About my decision… (sighing)…I feel free but not sure what to do after six months, what to do if I get sick”.

The expressions made by the participants reflect their satisfaction with infant feeding decisions made, but their inadequate confidence to comply with and sustain them due to some concerns, showing inadequate knowledge and skills. The gap created by such concerns requires closure through education, guidance and counselling, hence the development of infant feeding guidelines.

In one study some mothers showed limited knowledge, which precluded their free and informed decision-making ability. That limited knowledge called for more counselling and support to implement national infant feeding guidelines in
the HIV context, as echoed by a number of studies on infant feeding practices in sub-Saharan Africa (Young et al, 2010:2027; Ndubuka et al, 2013:4).

Inadequate infant feeding knowledge was elicited in another study conducted in Gert Sibande, South Africa (2010) which revealed that some mothers have limited knowledge. Such a limit affected appropriate infant feeding practice, leading to mixed-feeding. A need to strengthen infant feeding education within HIV context was highlighted as crucial in this study (Ladzani et al., 2010:541).

Apparently, once the relevant capacity has been built among the HIV-positive mothers, the level of confidence in making informed infant feeding decisions will be elevated and compliance is likely to improve. This assumption was supported by a study conducted by Ellis (2013:14) where he attests that if HIV-positive mothers are given education on infant feeding, adherence to appropriate practices is attained.

The research findings revealed the need to develop confidence for the mothers to make informed infant feeding decisions. The barriers to EBF, which include lack of support from the community and workplace, and the perceptions that milk supply is inadequate, interfere with the mother’s freedom to decide on an infant feeding method (Young et al, 2010:2032; Ella et al., 2016:108).

Elimination of barriers such as conflicting messages and environmental pressures might instill confidence for the mothers to make emancipated decisions. The findings in this study are in agreement with those of a study done in Nigeria. In that study the mothers’ infant feeding decisions, her poor health, lack of breastfeeding time due to work, nipple size, and breast problems significantly influenced choices made. Consequently, confidence was reduced due to a lack of capacity to handle these problems, hence capacity building was found to be crucial (Eneji, Ngoka & Mgbekem, 2016:2418).
Compliance with Decisions Made

The importance of proper counselling need not be over-emphasised, as stated in a study that was done in Mpumalanga in 2009, for the mothers enrolled in a programme of prevention of mother-to-child transmission (PMTCT) of HIV. In that study, it was recommended that a better quality and effective counselling should be provided to increase compliance with exclusive infant feeding decisions and practices (Ukpe et al, 2009, p.337; Lazarus et al, 2013:14).

In this study the report reveals some lack of support for compliance with infant feeding decisions, hence the need for support of HIV-positive mothers to comply with their infant feeding decisions. Ideally, counselling messages should include identification of barriers and eliciting risk factors to mitigate the implementation of infant feeding decisions and recommendations (Oladokun et al, 2010:1112; Dadhich et al, 2013:8).

In this study the participants indicated poor or lack of support for compliance with their decisions, verbalizing it as follows:

**FGD1 P1:** “The friends talk, saying what if you run short of money to buy milk formula?”

**FGD1: P2:** “My family complained a lot about bottle feeding as this is expensive, the bottle-feeding needs money for milk (and I need money) for pampers yet breastfeed is ever there hence it is better to breastfeed than bottle feeding, but the condition forced me to bottle feed.”

**Pr1:** “May be afraid of the in-laws about their choices”.

**Pr6:** “The environment plays a very big role where for example I live with the in-laws where they will ask too many questions about my choice of feeding. If I’m breastfeeding they will expect me to give supplements before six months and that is contra-indicated to my option”.

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**Pr 3:** “All HIV-positive mothers should be provided with information to make informed decisions. Health workers to try and make mothers see the need for correct decision making without being influenced by myths, for their communities to make use of what they learnt from health workers for their own benefit”.

**Pr 11:** “To encourage them to improve themselves and also to attend classes like antenatal classes and to allow them to ask questions and to participate fully”.

**Pr 4:** “To counsel the entire family and the in-laws and the mothers to respect the patient’s decisions”.

**Pr 6:** “The mother must disclose and accept her condition”.

**Pr 2:** “Health education is very important, it gives encouragement e.g. adherence to treatment”.

Some participants felt well supported to comply with their infant feeding decisions. and verbalised it as follows:

**FGD3 P2:** “I also have no problem because I always have formula and he buys formula and so it’s always available, he buys before milk is finished”.

**FGD3 P3:** “At home, they buy things like baby clothes, milk because I am not working. I feel they help me a lot, all of them. It would be hard if they did not help me to buy milk formula. They love the baby a lot at home”.

**FG6 P1:** “My spouse said I must bottle feed to protect baby, I had no problem because that was my choice as well”.

In this study the participants expressed the importance of education, encouragement of the HIV-positive mothers to voice their feelings and concerns, and of counselling in order to empower them to make informed decisions and adhere to them. Counselling the HIV-positive mothers on infant feeding practices is likely to create a positive attitude which results in compliance with the infant feeding decisions and practices (Hiwot et al, 2014:925).

The challenge of non-compliance with expected infant feeding practices emerged from the findings. Compliance is enhanced by provision of adequate and clear infant feeding information as well as encouragement from the family,
significant others and healthcare workers. The healthcare workers have a responsibility to support infant feeding practices through counselling, encouraging, teaching and establishing linkages with the health system to provide skilled help to the mothers on their infant feeding choices (UNICEF/WHO, 2015:9).

- **Mother-Centred Information Guidelines**

In this study the need for information sharing remains a golden thread and warrants guidelines for relevant, appropriate and mother-centred information to be shared on infant feeding practices. In 2010 and 2015 the studies conducted in Uganda and Tanzania respectively revealed that some mothers were mix feeding, in a belief that breast milk is insufficient for the children, and this increased the risk to MTCT of HIV (Lanktree et al. 2010:385; Maonga et al, 2016:86).

The mixed-feeding challenge is supported by the report on the study that was done in KwaZulu-Natal, Western Cape and Eastern Cape provinces in South Africa, in 2006. In that study the mothers were compelled to mix-feed their infants by the family members who pressurised them to introduce fluids other than the milk, within a month of birth (Doherty *et al.*, 2006:93; Okong, Namaganda, Bassani, Tabaro, Zanetto, Mwebaze, Weimer, Tomasoni, Castelli & Giuliano, 2010:29). This challenge is echoed by Ndubuka et al (2013:4) in a study done in Botswana in which they attest that family pressures influence the infant feeding decisions of the HIV-positive mothers.

Mixed-feeding was also reported in some studies done in Burkina Faso, Cambodia and Cameroon, and in South Africa as the norm, which makes it difficult for some HIV-positive mothers to choose exclusive milk feeding (Desclaux & Alfieri, 2009:826; Mnyani *et al.*, 2017:7). However, exclusive breastfeeding remains the best choice for HIV free child survival; hence all mothers should be encouraged to choose it and avoid mixed-feeding (Yezingane Network & UNICEF, 2011:8; WHO, 2016:7).
The challenge of mixed-feeding was evident in the manner in which some of the participants in this study expressed how they were forced to mix-feed by the family members as follows:

**FG2 P2:** “At home I was told that I must give baby solids, their culture is that the babies of this family eat a lot so must be given solids immediately not after six months”.

**FG4 P1:** “At home they gave baby ‘inembe’ (fine maize porridge for babies) but I did not tell clinic that I mix-fed for fear of scolding by nurses; instead I told them that I was exclusively formula feeding”.

**FG5 P2:** “At home I told them not to mix feed, they disregarded it and gave glucose water saying they clean the baby as it’s not on breast”.

**FG6 P1:** “They forced me to mix-feed, yet the clinic said I must exclusively milk feed and I decided to do formula feeding”.

**FG7: P4:** “Because if I give milk alone the baby refuses bottle feed, my mother said I must give fine porridge meal called ‘inembe’, although it causes obesity”.

The mother-centred approaches to infant feeding counselling and education were identified as ideal to address some challenges that deter the HIV-positive mothers’ ability to make and comply with informed infant feeding decisions. The mother-centred approaches include any strategy which the HIV-positive mother participants in this study identified as possible alternatives to the ones that were used by their health facilities to provide them with infant feeding information. Maonga et al (2016:85) support the use of innovative infant feeding strategies to enhance of exclusive breastfeeding for HIV-positive mothers. They include identifying individual and group needs, spending more time with the healthcare workers on infant feeding guidance and information sharing and involving the significant others in infant feeding information sharing to enhance support.

Similar strategies have been identified in one of the studies done in Southern Africa by Lazarus et al (2013:8) as ideal to meeting the needs of preventing HIV transmission post-delivery. They further support the notion that counselling on
infant feeding requires being open to what the HIV-positive mothers need (Lazarus et al, 2013:7).

The participants verbalised their desire for mother-centred guidelines as follows:

**FG2 P3:** “I can add saying clinic must teach us on quiet days e.g. Saturdays because the clinic days are short for teaching as many don’t have enough time to ask. It will assist many to learn enough to support e.g. those on treatment”.

**FG5 P3:** “Eish… clinic gives us no support, they need to call us on quiet days like Saturdays to teach us many things as we are on treatment”.

**FG7 P3:** “…clinic must set teaching sessions that take longer than what happens, e.g. Saturdays when it’s not busy; some of us default due to lack of knowledge so enough teaching time will help us comply with treatment unlike getting wrong information from friends”.

**Pr 6:** “Expect mother to take initiative of following education on their own”.

**Pr 8:** “To allow mother to take her own decision without being pressurised”.

**Pr 9:** “I recommend that community dialogues should be introduced to make community members to be aware of feeding practices that a mother would continue with, as far as feeding the infant is concerned”.

**Pr 11:** “The mother must educate people that are taking care of the baby on how to feed the baby”.

In this study participants felt that they needed time for expressing their specific needs at the health facilities. They proposed times outside the clinic busy work schedules for their counselling and health education sessions. They verbalised their feelings as follows:

**FGD3 P3:** “Clinic must ask more and help us more on checking how baby grows”.

**FGD3 P4:** “I need information on why the clinic say exclusive breastfeeding for six months. Again, why must I come to the clinic because at clinic they teach us nothing but just check (baby’s) weight, write down and say nothing. Sometimes
at clinic they don’t even weigh our babies, they ask for age, write down and give return date. I also want to know why they let us come after nine months then after 18 months because it’s too long before the baby is checked, and I won’t even see if the baby is losing in between clinic visits.”

**FGD4: P3:** “To be reminded on what food to give to the baby, how often, what food to build body for the baby, until for example three years old. We are not getting that information because the time is too short”.

An inclusive strategy in which dialogue with HIV-positive mothers, their families and communities is recommended in some studies conducted in Southern Africa to identify their needs and enhance compliance with infant feeding decisions (Ellis, 2013:14; Lazarus et al 2013:7). The necessity for information that is specific and centred on the HIV-positive mother came out clearly in the study findings. Such information addresses those specific needs identified from the mother, which include how long to exclusively breastfeed, what food to include during weaning, to mention a few (Lazarus et al, 2013:8). Ideally, counselling messages should include identification of barriers that could mitigate the implementation of infant-feeding recommendations including eliciting of risk factors (Oladokun et al, 2010:1112; Zulliger et al, 2013:1553).

**4.3. RECOMMENDATIONS MADE BY PROFESSIONAL NURSES ON INFANT FEEDING PRACTICES IN SUMMARY**

The professional nurses narrated their recommendations on infant feeding practices of HIV-positive mothers, which were then consolidated and summarised as indicated below:

- Health workers should continue promoting breastfeeding to HIV positive mothers, as it is for the benefit of both the mother and baby and to make HIV-positive mothers to see the good in this choice of infant feeding;
- Maternity leave should be provided to all working HIV-positive mothers as most of them desire to breastfeed but because they intend to return to work soon after delivery, they opt for formula feeding;
➢ Continue reinforcing them on the information shared with them, such as to adhere to their choices, through on-going counselling and support;

➢ All HIV-positive mothers, their families and community should be provided with correct infant feeding information to make informed decisions;

➢ The HIV-positive mothers should educate the people that are taking care of their babies on how to feed them correctly;

➢ Health workers should promote appropriate infant feeding practices and compliance with such;

➢ HIV-positive mothers should be involved in group discussions and support groups, to enhance compliance with and sustainability of their infant feeding decisions;

➢ Family members should be compassionate, caring, loving and supportive to the HIV affected and the infected mother;

➢ HIV-positive mothers should disclose to members of the family so that they can get support from them;

➢ Involvement of all family members, including grandmothers and mothers-in-law, in the care of babies and infant feeding teachings;

➢ HIV-positive mothers should adhere to the practices which are needed for their life style, including the use of condoms, and breastfeeding is promoted, since there are measures applied to eliminate vertical transmission of HIV. The use of nevirapine (NVP) and bactrim therapy, as provided for breastfeeding mothers, is one of the measures to prevent mother-to-child transmission (MTCT) of HIV. Exclusive breastfeeding should also be practiced for the first six months of life as another measure to prevent MTCT of HIV;

➢ All mothers should breastfeed as long as they are taking their treatment as prescribed and use condoms during sexual intercourse to ensure that the viral load is suppressed;

➢ To try and find the best possible ways to teach about the HIV in order to remove stigma and promote compliance using the available skills;

➢ Universal precautions such as hand washing, and safe sex must be practiced.
4.4. CONCLUSION

This chapter dealt with the data analysis and the related findings based on the transcripts from the seven focus groups for HIV-positive mothers and three focus groups of the significant others. A total of two central themes, four categories and twelve sub-categories are presented, discussed, integrated and aligned with the existing literature. The elements of Wittmann-Price theory which formed an integral part of the interview schedule have been elicited in the study findings. Such elements include personal knowledge, empowerment, awareness of social norms, flexible environment, and reflection.

Recommendations for empowerment through better strategies for combating improper infant feeding practices were presented in this chapter. Such recommendations emanated from the coded data and were discussed in conjunction with the existing literature. This chapter also addressed phase two of the study and objective four on documenting the kind of support required by HIV-positive mothers to make decisions on infant feeding practices. The next chapter addresses phase three of the study, which describes the guidelines for support of HIV-positive mothers on their infant feeding decisions and practices.
CHAPTER 5
CONCEPTUALIZATION AND DEVELOPMENT OF GUIDELINES

5.1. INTRODUCTION

The purpose of this chapter was to conceptualize and to develop the guidelines for support of HIV-positive mothers in emancipated decision-making on the choice of infant feeding practices. The main purpose of developing guidelines is to assist in appropriate Child Health Care decisions by HIV-positive mothers to achieve better health care outcomes and improve access to infant feeding information (Vermeulen et al, 2014:7). The development of guidelines was based on the Wittmann-Price theory of Emancipated Decision-making (EDM) (Wittmann-Price & Bhattacharya, 2008: 226). According to this theory five sub-concepts should be present in a woman as an attribute for her to make emancipated decisions in order to achieve satisfaction from those decisions. The five sub-concepts of the Wittmann-Price Theory of EDM in Women’s health care are personal knowledge, empowerment, flexible environment, reflection and awareness of social norms. The latter were used to conceptualize the study in which they were defined as main concepts (Sithole, 2008:98).

Conceptualization refers to a process of forming a concept or concepts out of observations, experience or data, resulting in the formation of a mental picture about that concept (Harcourt, 2010:1). Concepts are complex mental formulations of experiences, thoughts or ideas and they contain attributes or characteristics that make them unique from all other concepts (Chinn & Kramer, 2011:158; Olenick, Allen & Smego, 2010:1; Webster, 2017:1). Finfgeld, (2006:1) and Duncan (2009:293) state that concepts are cornerstones in guideline development, hence a need to thoroughly describe each concept within a study.
The following discussion will focus on conceptualization process which commences with concept development.

5.2. CONCEPT DEVELOPMENT

Concept development refers to a process of exploring attributes, antecedents and consequences and is useful in clarifying the study concepts and their significance to the study (Boniface, 2016:1). Attributes are words used to describe characteristics of a concept; antecedents are events that precede a concept under study and, consequences refer to the events that result from a use of the concept under study (Bousso, 2011:6).

Concepts are complex mental formulations of experiences, thoughts or ideas and they contain attributes or characteristics that make them unique from all other concepts (Chinn& Kramer, 2011:158; Olenick, Allen & Smego, 2010:1; Webster, 2017:1). Finfgeld, (2006:1) and Duncan (2009:293) state that concepts are cornerstones in guideline development, hence a need to thoroughly describe each concept within a study. The selected concepts for conceptualization and guidelines development reflect the study purpose and they focus on the support of infant feeding practices of HIV-positive mothers for emancipated decision making. The nature of support provided for HIV-positive mothers determines whether infant feeding decisions are emancipative and sustainable. Ella et al (2016:8) attest that Exclusive breast feeding decision and practice up to six months can only be effective if mothers are supported by their significant others such as spouses, in-laws and friends.

Concept analysis is an excellent way to commence examination of any information in preparation for theory construction, guidelines or knowledge development and to guide education, and research, hence the next step is concept analysis (Walker and Avant, 2011:158; Reed, 2014:1),

5.2.1. Concept analysis
According to Walker and Avant (2011:157) concept analysis is a strategy that allows a researcher to examine the attributes and characteristics of a concept during concept development. Concept analysis seeks to determine the meaning, structure, function, attributes, antecedents, consequences and characteristics of a concept (Moreira, Fernandes, Santos, Gomes, Mourao, Oliveira, Almeida, Rocha, Mendes, de Pinho, Costa, Benevides, Aquino, Ferreira & Araujo, 2016:492; Fitzpatrick & McCathy, 2016:2). The ultimate aim of concept analysis and development is to provide meaning and common understanding of that concept in order to make it clearly communicable, usable in clinical practice and measurable (Olenick, Allen & Smego, 2010:1; Reed, 2014:1; Bousso, Poles & da Cruz, 2014:3).

Walker and Avant (2011:159) modified and simplified eleven steps of concept analysis of Wilson (1963) into eight steps. Five of the steps were applied in this study, in view of their relevance, for concept development, namely:

- Selection of a concept;
- Determining purposes of analysis;
- Identifying all uses of the concept
- Determine the defining attributes
- Identify antecedents and consequences (Liu et al, 2014:70).

The above-mentioned steps were briefly discussed in this study and were further included and applied in the development of concepts as follows:

**5.2.1.1. Selection of a concept**

A concept is defined as an expression of what different individuals perceive and experience of a particular phenomenon in their respective environments and consists of attributes that make it unique from other concepts (Walker, 2009:1; Olenick et al, 2010:1; Chinn & Kramer, 2011:158). Selection of a concept is determined by its relevance to a phenomenon under study and is guided by the purpose of the study, associated values and the problem statement (Burns and Grove, 2009:146; Chinn & Kramer, 2011:163; Bousso, Poles & da Cruz, 2014:1).
The purpose of the study was to explore the experiences of HIV positive mothers on their decisions about choices of infant feeding practices and to develop guidelines to support infant feeding practices of HIV-positive mothers. The five concepts of Wittmann-Price theoretical framework (Wittmann-Price & Price, 2014:1) upon which the study was based were selected for analysis and development of guidelines. These concepts are: empowerment, flexible environment, personal knowledge, reflection and awareness of social norms.

5.2.1.2. Determining the purpose of analysis

Concept analysis serves to provide clarity and common understanding, in this study, concept analysis was done to clarify the meaning of concepts identified based on study problem, purpose as well as Wittmann-Price theory concepts. This clarity is enables other users to share common understanding when implementing guidelines based on these concepts and to differentiate between two closely related concepts (Chinn & Kramer, 2011:165; Bousso et al, 2014:1).

In the context of this study the purpose of concept analysis was to:

- Align the five concepts involved of emancipated decision-making process with the infant feeding practices decision-making of HIV-positive mothers for relevance and suitability in development of guidelines;
- Delineate the valid attributes and the irrelevant attributes of the concepts, such as support, Infant feeding, decision-making, flexible environment, personal knowledge, which may have a wider meaning thus subject to various interpretation in different settings;
- Guide the process of guidelines development by eliciting crucial aspects that need attention to respond to the issues identified in the study data;
- Determine the extent to which the selected concepts could be utilized in the development of guidelines;
- Identify and eliminate ambiguity with regard to selected concepts thereby ensuring clarity in their meaning;
• Ensure appropriate reflection on the attributes and the relationship of the concepts to one another (Chinn & Kramer, 2011:165; Bousso et al, 2014:5).

5.2.1.3. Identifying the uses of the concept

The potential uses of the study concepts at different levels were explored in order to apply them in guidelines development. The example in this study would be that the empowerment of HIV-positive mothers occurs in the home environment informally and formally at the health facility, based on the identified needs. The available relevant literature, dictionaries, thesauruses and other relevant sources were used to gather as many uses as possible for the main concepts in this study. The search included not only nursing but sociological and psychological literature.

The relevant literature was also used to describe the Wittmann-Price theory concepts since they form the basis for this study (Wittmann-Price & Price, 2014:1). The literature assisted in defining attributes, antecedents and consequences of the concepts used in this study. The selected concepts were used as building block for the development of infant feeding guidelines and through their analysis unique features of each concept assist to eliminate ambiguity (Liu, Avant, Aunguroch, Zhang & Jiang, 2014:70).

5.2.1.4. Determining the defining attributes

Attributes are defined as characteristics that appear in a concept repeatedly and assist the researcher to differentiate occurrence of a specific phenomenon from the one similar to it and clarify the meaning of that concept (Brush, Kirk, Gultekin & Balardi 2011:3;). The defining attributes are likely to change any time as the new understanding of the concept emerges (Wittmann-Price & Price, 2011:1). The defining attributes assist in differential discriminating features that describe and those that do not describe the phenomenon in question, hence the attributes vary according to a context in which they apply (Moreira, Fernandez, Santos, Gomes, Mourao, De Oliveira, Almeida, Rocha, Mendes, Pinho, Costa, Benevides, Aquino, Ferreira & Araujo, 2016:492).
5.2.1.5. Identifying antecedents and consequences

Walker and Avant (2005) in Brush et al (2011:3) define antecedents as the events or attributes that must occur prior to the occurrence of the concept. The process of identifying antecedents entails searching for events or incidents that have occurred prior to a phenomenon under study (Moreira et al, 2016:492). The consequences are defined as those events or incidents that can arise as a result of the occurrence of a concept (Bousso et al, 2014:5). Such events can often stimulate new ideas or avenues for research pertaining to certain concepts (Brush et al, 2011:3).

Antecedents, in this study, refer to those conditions that must be in place or occur to enable the HIV-positive mothers to make emancipated infant feeding decisions and adhere to such decisions. Antecedents for the emancipated infant feeding decision-making include adequate counselling, health education and experience in infant feeding practices. The HIV-positive mothers therefore should be well equipped with relevant information on infant feeding in order to make informed contextual decisions.

The consequences of failure to make emancipated infant feeding decisions will be the practice of mixed feeding. Mixed feeding is a high risk to vertical transmission of HIV infection through breast milk feeding, which causes infant morbidity and mortality (UNICEF, 2012:109). The consequences of inadequate empowerment may manifest in other poor infant feeding practices such as inappropriate preparation of milk formula, which further result in morbidity and mortality (Moreira et al, 2016:495).

5.3. Analysis of main concepts

Concept analysis, an important step in theory development, entails clear definition of a concept in order to reduce occurrence of ambiguity regarding the given concept (Alligood, 2014:45). The development of guidelines for the support of infant feeding practices of HIV-Positive mothers was based on the Wittmann-
Price theory concepts (Wittmann-Price & Bhattacharya, 2008: 226). According to this theory five sub-concepts should be present in a woman as an attribute for her to make emancipated decisions in order to get satisfaction from those decisions. The five sub-concepts of the Wittmann-Price Theory of Emancipated Decision-making in Women’s health care, namely, personal knowledge, empowerment, flexible environment, reflection and awareness of social norms are the main concepts in this study. Each of the steps of concept analysis as modified and simplified by Walker and Avant (2011:159) is applied in the analysis of the five main concepts of the study in the following discussion.

5.3.1 Personal knowledge

The personal knowledge concept was selected to identify its attributes and align it to the other sub-concepts of Wittmann-Price Theory. The purpose of selection was also to determine to what extent it could be utilized to develop infant feeding guidelines to support HIV-positive mothers in decision-making and practices.

Personal knowledge may be acquired formally or informally through literature, recalled stories and relating with people (van Dyk, 2012:138; Priti, 2011:2). Personal knowledge may also be acquired through the answers to some challenging question which trigger memory release and storage of recovered information which then is remembered periodically and used as required (Bonneau, Bursztei, Caron, Jackson & Williamson, 2015:141).

The HIV-positive mothers need correct accurate information to guide them to make appropriate decisions on infant feeding practices. The latter is possible if personal knowledge is adequate, relevant and specific to their infant feeding needs within the HIV-context. The WHO guidelines (2016:2) to support the HIV-positive mothers further echoes the importance of directing all efforts towards provision of information for appropriate infant feeding decisions and practices.

The International and National infant feeding guidelines are periodically reviewed and updated to guide and improve survival of infants who are exposed to HIV through appropriate infant feeding practices. The government should support all
efforts towards informed infant feeding decision-making for pregnant women and mothers living with HIV at various levels (WHO, 2016:2). Improved access to and utilization of appropriate infant feeding information for HIV-positive mothers are imperative for HIV free child survival

Whilst personal knowledge is so significant for informed sustainable infant feeding decisions that enhance HIV-free child survival, the HIV-positive mothers still display inadequate access to this information as evident in some inappropriate infant feeding practices. The infant feeding guidelines will bridge that gap thus promoting adequate access to infant feeding information on appropriate infant feeding decisions and practices, thus enhancing positive behaviour change (van Dyk, 2012:139).

- **Determining the purpose of analysis**

Concept analysis is useful in identifying the unique characteristics of that concept, clarifying any ambiguity and providing some meaning and deeper understanding thereof (Liu, Avant, Aungsuroch, Zhang & Jiang, 2014:70). The amount and type of infant feeding knowledge possessed by HIV-positive mothers shaped the extent to which the guidelines should be structured so that they become responsive, relevant and fit for purpose of meeting identified needs

The purpose of analysis of personal knowledge was as follows:

- To provide understanding and clarity regarding its meaning in relation to infant feeding decisions and practices for HIV-positive mothers.
- To identify and explain the relationship of personal knowledge with the other main concepts of this study such as empowerment and awareness of social norms.
- To determine its relevance and applicability in the development of infant feeding guidelines.
- To elicit the defining attributes, antecedents and consequences of personal knowledge for correct interpretation thereof in this study (Chinn & Kramer, 2011:165; Bousso et al, 2014:5).
• **Identifying uses**

Personal knowledge concept forms the basis for making informed emancipated decisions and is useful in capacity development with relevant reliable information in a particular area of need and context (Bonneau et al, 2015:149). Personal knowledge and academic knowledge exist in academic environment and are seen as belonging to different worlds according to Polanyi (1962) as cited by Papadopoulou (2015:2). Both types of knowledge yield to active interpretation and understanding of the surrounding environment which is key to their existence. Personal knowledge also enriches the individual and adds to existing pool of personal knowledge and skills.

In this study personal knowledge enables the health care workers to determine the amount of information and skill possessed by HIV-positive mothers to make and maintain appropriate infant feeding decisions and practices. The health care workers will utilize the infant feeding guidelines to determine and bridge the gaps in the personal knowledge of HIV-positive mothers. Personal knowledge provides the HIV-positive mothers with confidence and freedom to make informed infant feeding decisions.

• **Determine the defining attributes**

Personal knowledge manifests itself through the amount of information that a person acquires which could be from observation and such knowledge enriches the individual and adds to existing pool of personal knowledge and skills (Heydon, 2013:1). Personal knowledge may also be observed in a behaviour that produces some confidence and satisfaction. HIV-positive mothers with personal knowledge on infant feeding practices are more likely to make emancipated decisions and comply with such.

Possession of knowledge further manifests itself through a behaviour that can be measured by satisfaction and freedom. For an example a woman who has adequate infant feeding knowledge and skill has liberty to make emancipated sustainable decisions. Personal knowledge is true, valuable and often derived from one’s experiences of a particular phenomenon (Wittmann-Price, 2008:234; Heydon, 2013:1). The personal knowledge of HIV-positive mothers on infant
feeding, as explored during focus group interviews, was found to be inadequate. The HIV-positive mothers expressed a need for more time and information in order to comply with chosen infant feeding decisions and practices. Other attributes inherent in personal knowledge include the following:

- It is dynamic in nature because the process of acquisition never ends and once stored personal knowledge may be accessed and assessed periodically for relevance, depth and ability to facilitate satisfaction in decision-making.
- It is readily accessible and available to be used whenever necessary (Heydon, 2013:1; Priti, 2011:1)

HIV-positive mothers gain relevant knowledge from the infant feeding information shared by Community Health Workers, their significant others and their experiences as mothers. The nature of their infant feeding personal knowledge determines to a large extent the level of emancipation in infant feeding decisions and practices. Adherence to appropriate infant feeding practices based on such personal knowledge will be anchored by positive support from their environment, hence the need for specific infant feeding guidelines to support Community Health Workers (WHO, 2016:1)

- **Identify antecedents and consequences**

**Antecedents**

Personal knowledge is acquired through formal means of structured information sharing and informal means of observing and experiencing, therefore, the HIV-positive mothers should have formal education and counselling sessions. Education sessions become antecedents to personal knowledge acquisition. Infant feeding guidelines becomes the source of appropriate information to teach and support infant feeding decisions and practices for HIV-positive mothers. The antecedents may occur immediately before or may have accumulated over some time before manifestations of behaviour. The HIV-positive mothers who had more than one infants have had some experience and so added personal knowledge on infant feeding

**Consequences**
Ability to make appropriate infant feeding decisions and practices and satisfaction with such, form the consequences of appropriate personal knowledge.

Papadopoulou (2015:2) views personal knowledge as an outcome of people’s experiences and perceptions whereas academic knowledge is based on theories and scientific knowledge.

Effective communication is enhanced in which the HIV-positive mothers will not shy away for fear of embarrassment but expresses her concerns freely to ensure appropriate infant feeding decisions and practices. Motivation is instilled within the HIV-positive mothers if they have adequate personal knowledge to address their infant feeding needs and concerns (Muller & Bester, 2016:307). Satisfaction with the infant feeding decisions, self-determination and increased sense of responsibility are enhanced if the HIV-positive mothers have adequate and relevant personal knowledge. Such attributes further enhance the ability to make sustainable infant feeding decisions and practices (Muller, 2016:108). Fear of stigmatization and judgemental attitude towards the HIV-positive mothers, evident in this study findings, limit their ability to expand their personal knowledge that will enhance understanding and compliance with optimal infant feeding practices.

5.3.2. Empowerment

The concept was selected for analysis and to determine the extent to which the HIV-positive mother will be able to freely make infant feeding decisions and practices. Apart from being educated, individuals may be empowered through internal self-motivation in which a feeling of worth, self-efficacy and confidence is built within the individual and transfers to the search for information (Wittmann-Price & Bhattacharya, 2008:234). Based on the expressed needs for empowerment of HIV-positive mothers, as revealed in the study findings, the client-centered infant feeding guidelines will be developed. Such guidelines focus on the needs of the HIV-positive mothers and the appropriate activities to meet the identified needs.
Health care workers need to empower HIV-positive mothers through health education on infant feeding at each visit to a health facility. Various media may be used to cascade infant feeding information for decision-making such as health education, television clips on infant feeding and user-friendly flyers. Individuals, groups and communities who participate in infant feeding practices within the context of HIV-positive mothers should be empowered through skilled counselling and appropriate support (WHO, 2016:7).

- **Determining the purpose of analysis**

The purpose for analysis of empowerment concept was to explore its features and how it relates to the other selected concepts. Analysis of empowerment gives direction to the structure and utilization of infant feeding guidelines. Empowered people become stronger and confident to control their lives and claim their rights and analysis of this concept seeks to identify means by which it could be applied to empower HIV-positive mothers (van Dyk, 2012:154).

According to the programmes of Ubuntu Institute (2017:1), change in behaviour occurs at three levels, namely: community, individual and structural levels. At community level the focus is on change in social norms and contexts, which impede development and emancipation of women. At individual level the focus of change is on knowledge behaviour and attitudes, which perpetuate inappropriate practices such as mixed feeding in the context of this study. At structural level the focus of change is on policy makers, leadership and infrastructure, which should support empowerment programmes and activities (Muller & Bester, 2016:160).

Health care workers need to empower HIV-positive mothers through health education and counselling on infant feeding at each visit to a health facility. Various media may be used to cascade infant feeding information for decision-making, ideally during pregnancy. Group discussions, role plays, debates and story-telling on best practices are some of the strategies that may be used for empowerment. (Muller & Bester, 2016:432).
• **Identifying uses**

Empowerment is an enabling, equipping and emancipating process therefore it focuses on setting people free such as women (Houghton, 2016:1). Empowerment equips individuals with power and or authority to effectively transform their lives and environments through education or training (van Dyk, 2012:149; Muller & Bester, 2016:432). Empowerment also equips people with relevant information that improves their life and prevents perishing hence no woman and infant should die because of lack of knowledge (HIFA2015:1).

Empowerment is further used as a process of enabling people to critically understand social, cultural, economic and political forces in their lives and environment and ability to take action against oppressive forces thus improving their quality of life (van Dyk, 2012:149, 153 &237). Empowerment provides the individuals and communities with power or authority to effectively transform their lives and environments through education or training (van Dyk, 2012:149; Muller & Bester, 2016:432).

Empowerment supports individuals in meeting their rights to health such as a right to reliable, relevant health information from health care providers such as community health care workers in child health facilities. Empowered individuals are equipped with increase in their personal knowledge thus emancipation to use their rights of freedom to choose what is best for them and change into healthy practices including infant feeding practices (Houghton, 2016:1).

Infant feeding guidelines will provide the support which is necessary to enhance empowerment of HIV-positive mothers on infant feeding decisions and practices. Empowerment is used as a state of enabling people to critically understand social, cultural, economic and political forces in their lives and environment and ability to take action against oppressive forces thus improving their quality of life (van Dyk, 2012:149, 153 &237).

• **Determine the defining attributes**

The definition of empowerment is more contextual, depending on the individual concerned. It involves communication with individuals and empowerment has
potential to change lives and environments of the people (Al-Smadi, 2014:7). The defined attributes of empowerment according to Al-Smadi (2014:7) are as follows:

- Collaboration between individuals who share common goals and communicate with one another;
- Availability of alternatives for decisions and accepting responsibility and accountability for such decisions;
- Reciprocal decision-making process and mobilization of resources using one’s rights and power appropriately;
- Being a helping process where someone’s life becomes changed due to empowerment;
- Interdependent participation characterized by sharing information and knowledge, and
- Educating, mentoring, leading, providing and structuring.

Once empowered, the HIV-positive mothers will be emancipated to make infant feeding decisions and practices that are appropriate for HIV-free child survival (van Dyk, 2012:149).

- **Identify antecedents and consequences**

**Antecedents**

For empowerment antecedents include access to resources and information, which provide the individuals with machinery to perform required activities, existence of formal and informal power as well as access to support (Orgambidez & Borrego, 2014:2). Access to required resources for the HIV-positive mothers may include access to food, and money to buy food to be successful in exclusive breastfeeding and access to the relevant support for implementation of infant feeding decisions and practices.

Effective leadership, training, clear lines of communication, motivation and energy to perform activities are also antecedents to empowerment. The motivated and energized people become more empowered and effective in job or any related performance (Tan, 2007:19) Effective leadership styles that are antecedents of empowerment further include expression of confidence by the
individuals concerned, encouraging them to participate in decision-making (Conger & Kanungo, 1988, 478; Orgambidez & Borrego, 2014:1).

**Consequences**

In empowerment consequences are a paradigm shift in various areas including management of a facility (Tan, 2007:22). Consequences of empowerment may be manifested on the performance and on the attitudes of the individuals concerned. A high level of performance with increased effectiveness and productivity is one of the consequences of empowerment (Kirkman & Rosen, 1999:62; Orgambidez & Borrego, 2014:1). Other consequences include satisfaction with the decisions taken and with performance, which in turn increase effectiveness (Orgambidez & Borrego, 2014:2). Regarding the infant feeding guidelines, the HIV-positive mothers should be so empowered by implementation of such guidelines that they will be more emancipated to make appropriate informed decisions.

Other consequences of empowerment include the following:

Self-determination, in which the HIV-positive mothers acknowledge that they have ability to accept the counselling and make informed decision without fear of inappropriate social norms in their larger environment.

Ability to change into appropriate safe infant feeding practices as the need arises without fear of stigmatization.

Freedom and ability to support other less empowered mothers and participation in support groups for infant feeding practices such as breastfeeding support groups (van Dyk, 2012:149 & 237).

The level of empowerment of HIV-positive mothers in this study demonstrated limited independence, limited access to infant feeding support which tantamount to low level of empowerment. However, confidence in decision-making indicated positive consequence of empowerment, which becomes a strength to build upon using the formulated guidelines.

**5.3.3 Flexible environment**
The concept was selected because, as part of Wittmann-Price theory sub-concepts, it influences the infant feeding decisions and practices of HIV-positive mothers (Wittmann-Price & Price, 2014:1). Environment is defined as the conditions that surround someone or something and it includes the influences that affect the growth, health and progress of someone or something (Webster, 2017:1). The environment surrounding the HIV-positive mothers consists of various factors such as negative infant feedings opinions and forced pressures of significant others. Selection of this concept therefore provides an opportunity to analyze it in the light of its impact on infant feeding decisions and practices.

If the woman’s choice is incongruent with what she knows is best for her, dissatisfaction with the decision may be experienced. There is an assumption that for future exploration, dissatisfaction may result in poor compliance with the chosen infant feeding option (Wittmann-Price & Bhattacharya, 2008:226).

The Wittmann-Price Theory stipulates that there are possible challenges, such as noncompliance, for a woman whose infant feeding decision is driven by pressure from the social norms, hence a need for flexible environment for freedom of choice (Wittmann-Price et al. 2011:464). A flexible environment would not allow cultural factors and influence from significant others and families to limit HIV-positive mothers from executing their infant feeding decisions (Mnyani, 2014:6).

The study findings suggest that there is a need to increase one-on-one and ongoing counselling to the significant others to understand HIV in the context of infant feeding decisions and practices. The expected outcome of such counselling will be creation of a flexible environment which will allow freedom of choice for the safe infant feeding practices. Relevant stakeholder involvement was another variable elicited in this study for creation of a flexible environment in which the HIV-positive mother is likely to experience satisfaction with the infant feeding decisions made. The more informed the stakeholders such as health care workers they are, the more positive their support will be to the HIV-positive mothers to make informed safe infant feeding decisions and be compliant with them.
**Determining the purpose of analysis**

The purpose of analysis of the concept, flexible environment is to determine the extent of its impact on infant feeding decisions and practices for HIV-positive mothers and how it relates to the other study concepts. By definition the term flexible refers to something whose purpose is to change or be changed easily according to the situation (Cambridge Dictionary, 2014:1). A flexible environment is the one that affords a woman the opportunity to enact on her choice without opposition (Wittmann-Price 2004:439; Wittmann-Price et al. 2011:464). When there is incongruence between social norms and personal knowledge, a flexible environment is necessary to facilitate an emancipated decision-making process.

The environment where HIV-positive mother find themselves is not static but undergoes change hence the analysis of this concept will bring light to the possible factors within environment, which can influence infant feeding decisions and practices. Environmental factors include people and their practices which may influence the infant feeding decisions and practices (Webster, 2017:1). A flexible environment will allow for the implementation of personal knowledge on best practices that promote HIV-free child survival, as it unfolds, rather than adhering to social norms that contradict such practices.

**Identifying uses**

The concept flexible environment is useful for identification of those factors and influences which may impact positively or negatively on the infant feeding decisions and practices of HIV-positive mothers. This concept is also useful in that the factors within it guide the information to be discussed within the context of the phenomenon under discussion (Mnyani, 2014:6). In the case of this study the flexible environment shapes the content to be included in the guidelines development for support of HIV-positive mothers in their infant feeding decisions and practices.

The guidelines provide for eliciting of influences within the environment by healthcare workers during their interaction with HIV-positive mothers. Eliciting negative influences will assist in promoting a flexible environment for infant
feeding decisions and practices. Negative influences may include stigma from
the health workers and family and this must be condemned strongly and
ultimately eradicated to create a flexible environment for infant feeding decisions
and practices (Mnyani, Simango, Murphy, Chersich & McIntyre, 2014:8).

- **Determine the defining attributes**
Flexibility is a personal attribute and is part of the formula for adaptability. The
attributes of flexibility include confidence, empathy, respect and tolerance for
others and being positive (Alessandra, 2016:1). The negative flexibility is the
opposite of high flexibility in that it manifests with rigidity, inapproachability,
discontent and being a difficult person and so unsociable person (Alessandra,
2016:2). The flexible environment is thus the type that will allow changes and
adaptability to be effected according to the need and purpose. A flexible
environment enables the HIV-positive mother to comply with her infant feeding
decisions without being intimidated by the social norms that might be
inappropriate and dominate her environment.

- **Identify antecedents and consequences**

**Antecedents**
An antecedent of a flexible environment is the positive attitude of the people
within the environment as well as less rigid policies and other prescripts (Mnyani
et al, 2014:8). Less rigid policies will allow for adaptation into any new strategy
for improvement of lives and health of the people such as a new policy on infant
feeding in the context of HIV-positive mothers. The existence of infant feeding
guidelines is a significant antecedent to the flexible environment that will allow
implementation of the developed guidelines to improve infant feeding decisions
and practices.

The revised National infant feeding policy recommends exclusive breastfeeding
for six months and may continue breastfeeding up to two years or more, with
support for ART adherence (WHO, 2016:3). Such revised policy is an
antecedent for acceptance of the change into the developed guidelines to
enhance their implementation as a global call for improved infant feeding practices to eliminate Mother-to-Child Transmission of HIV.

**Consequences**

The consequences of flexible environment may be positive or negative. Positive consequences include effective acceptance of and adaptability to the changes in the practices in favour of newly introduced strategies for improvement in the health and lifestyle of the individuals. Creation of a flexible enabling environment is thus an important step towards attainment of satisfaction with decisions made about infant feeding practices (WHO, 2016:10).

Negative consequences include diverting from set standards which create stress for others and subsequent emotional health (Ndubuka, et al, 2013:4). In the context of HIV-positive mothers, the oppression from the environment in spite of personal knowledge, limit emancipative decision-making on the choice of infant feeding practices. The impact of oppression was evident in this study where the HIV-positive mothers expressed their fear of stigmatization and judgmental attitude from their significant others and community, which led to inappropriate feeding decisions and practices. The latter hindered their insistence on chosen methods for fear of loss of income and other support from significant others on whom they depend for survival (Ndubuka, et al, 2013:4)

**5.3.4. Reflection**

The concept, reflection, was selected because it forms part of the main study concepts and has significance in determining level of empowerment of women in decision-making. Since reflection entails looking back at one’s action, it will assist the HIV-positive mothers to reconsider their infant feeding decisions’ (Kumar, 2016:1). The reason for reconsidering infant feeding decision is to determine whether they made appropriate decisions and to adhere to the appropriate ones. Reflection involves linking current experience to previous learning and emotional information derived from several sources including visual, tactile and kinesthetic (Kumar, 2016:1; Costa & Kallick, 2008:1).
According to Tashiro, Shimpuku, Naruse, Maftuhah and Matsutani (2013:174) reflection is an ongoing developmental process, which occurs in three stages, namely:

- Awareness of thoughts and feelings which make one uncomfortable;
- Critically analyzing that uncomfortable situation and
- Developing a new perspective and building competence and confidence in life

Various models that describe the reflective process exist and they vary according to the author. The Gibbs’ reflective cycle as described by Helyer (2015:15) is a renown model which is applied for reflection and consist of six stages, namely: description, feelings, evaluation, analysis, conclusion and action plan, as described in figure 5.1. The following figure depicts the Gibbs’ reflective cycle model.

**Figure 5.1: Gibbs’ reflective cycle.** (Adapted from Helyer, 2015:19)
The following discussion focuses on the six stages in the Gibbs’ reflective cycle.

**Stage 1:- Description**, which describes the particular event specifically by responding the question: what happened? In the context of infant feeding decisions and practices the event could be a decision to exclusively formula feed for the first six months of the infant’s life.

**Stage 2:- Feelings**, which describe the honest feelings and thoughts that a person such as the HIV-positive mother experienced when that particular event took place, by responding to the question: what were you thinking of or feeling? She might describe her feelings which could be uneasiness because the decision contradicts the social norm such as breastfeeding not formula feeding (Tashiro et al, 2013:171).

**Stage 3:- Evaluation**, which describes things that happened and reaction of other people by responding to the question: What was good or bad about that event or situation? The HIV-positive mother may need to respond to this question to determine her extent of emancipation with freedom of fear and doubt about acceptability of her infant feeding decision to the significant others (Mnyani et al, 2014:8).

**Stage 4:- Analysis**, which is a very important stage where a person describes various factors that could have mitigated the situation to prevent unwanted event from happening. It responds to the question: What might have helped prevent the event from happening? In the context of the infant feeding decisions and practices, the HIV-positive mother might consider options such as yielding to social pressures of formula feeding even where there were contradictory conditions (Kumar, 2016:1).

**Stage 5:- Conclusion**, in which one acknowledges if there was anything else that could have been done, changed or learnt from the event under discussion and if best practices learnt could readily be repeated to yield same results. It is achieved by responding to a question: What else could have been done? The HIV-positive mother explores various possibilities to determine if there was any
better way to reach an outcome of HIV-free child survival, other than implementing the acquired information. She could do this by considering what other options are available for her (Kumar, 2016:1).

**Stage 6:- Action plan**, which give a summary of what needed to be done or known and the future plans to mitigate the situation encountered. It is achieved by responding to the question: What would be done if the same event crops up again? In response to this question the HIV-positive mother might use the acquired experience from counselling and information and skill gained to make appropriate infant feeding decisions and practices for future infant feeding. The Gibbs’ reflective cycle stimulates debates on some issues of interest and their outcome in an effort to learn from shortcomings and best practices emanating from the encounter with various situations and some decisions taken (Helyer, 2015:22).

- **Determining the purpose of analysis**
  The purpose of analyzing the concept reflection was to gather information about its nature and its relationship with the other main study concepts. Reflection process might be uneasy for some people as it involves exposing one’s thoughts and experiences to others hence group engagement might offer support and guidance as needed (Helyer, 2015:15).

According to Costa and Kollick (2008:1) reflection involves drawing information from where it was stored then acting upon and processing then applying it to different contexts hence it is referred to as essential learning and development tool. The reflection process begins at almost soon after birth, forming part of every person’s continuous development process (Helyer, 2015:20). The HIV-positive mother may reflect on the infant feeding decisions that have been made in the early stages of pregnancy to implement them soon after the birth of her neonate.

- **Identifying the uses**
  In reflection an individual seriously contemplates on a particular action or decision made after which a decision is made to pursue or drop that particular
Reflection is an essential learning tool in that a person examines the decision or action taken, identifies flaws then learn not to repeat them (Helyer, 2015:3).

Reflection basically assists in critical thinking about the events and experiences of the past within the present contexts. Reflection process also assists in determining whether decisions made are still adhered to and to express challenges and spin-offs for such decisions (Helyer, 2015: 22). Reflective skills are very essential for personal growth and development and they keep an individual in constant communication with environment surrounding them (Helyer, 2015:22). Reflection also stimulates discussions on certain aspects that could be of interest, which may result in the change for better approaches and adoption of best practices learnt in the previous events, situation or even decision (Helyer, 2015:22; Kumar, 2016:1).

Reflection models like the Gibbs Reflective cycle assist us in assessing our own thoughts and actions for personal and other people’s development. It is also more of a problem-solving approach in which several ideas are brought together to address the issue at hand (Kumar, 2016:1). Reflection on the infant feeding decisions and practices made and the lived experiences allows the HIV-positive mothers to determine whether the best choices were made or not. Depending on the outcome of reflection, the HIV-positive mothers may consider changing the infant feeding options made in favour of the best one available irrespective of opinions of the significant others.

- **Determine the defining attributes**
  Since reflection entails sharing some information on various situations encountered in life it involves people therefore attributes thereof include the following:
  - Collaboration with other people by working in groups;
  - Willingness to listen to others and openness to new information;
  - Process of learning from experience or situations encountered in life;
  - Ability to withstand criticism;
- Recognition of one’s emotional reactions and enquiring for more information;
- Sharing accurately on real life experiences as a learning mechanism;

Reflection also looks at what happened in the past, what is happening now and what is likely to happen in the future, hence it is referred to by Schon (1987:26) in Helyer, (2015:22) as reflection “in” and “on” action. Reflection ‘on’ refers to thinking of the past events, whilst reflecting ‘in’ action refers to thinking about what is happening currently, in the midst of the event without necessarily interrupting it (Helyer, 2015:21).

In the context of this study, the HIV-positive mothers have moments of reflecting on the infant feeding decisions that she has made particularly during the labour. The timing, during labour, enables her to interact with health care workers and revisit her initial decision then decide whether to maintain or change it, based on new information shared or thoughts about the chosen infant feeding. The variables depicted in this study with regard to reflection include improved capacity building strategies and mother-centred information guidelines. Based on the study findings there was clear indication that the HIV-positive mothers need substantial information on safe infant feeding to support their decisions and practices. The required information should be based on their level of empowerment and their felt and unfelt needs according to the study findings in which there was an outcry for more information on various infant feeding aspects.

- **Identify antecedents and consequences**

**Antecedents**
When a gap exists between what is known and what needs to be known a dilemma sets in, which triggers a reflection process. This is common in an institution of teaching and learning where a gap could exist between theory and practice and such a gap becomes an antecedent of reflection (Tashiro et al, 2013:172).
New emerging information and knowledge require some reflective process and more skills such as new infant feeding guidelines that need to be understood for implementation. Self awareness is an essential antecedent in order to assess one’s situation fairly and accurately as well as to attain self-actualization. Ability to collaborate with others to acquire the necessary data that will be needed for reflective process is another antecedent (Tashiro et al, 2013:173).

Group discussion among the HIV-positive mothers on their infant feeding practices could result in understanding of some challenges they each encounter. This notion is supported by Lazarus, Struthers and Violari (2013:3) who state that changing infant feeding practices require groups to interact together and reflect on best infant feeding practices. Formation of breastfeeding support groups may facilitate reflection of the group of HIV-positive mothers on their experiences which include strengths and challenges with regard to breastfeeding. The outcome of their reflection might yield positive strategies to promote effective and safe breastfeeding within HIV-positive context.

**Consequences**

The following are the consequences of reflection:

**Transformation:** Following exposure to changes and new information that result from the reflective process, new perspectives are gained, coupled with new skills, new abilities and strategies to handle challenges (Tashiro et al, 2013:175). The HIV-positive mothers may acquire new abilities to handle stigma and other challenges such as forced mixed feeding encountered because of chosen infant feeding practices (Lazarus et al, 2013:5).

**Improved communication:** During reflection a person learns more about her values and feelings, how they influence the others thereby strengthening her relationship and communication with them (Tashiro et al, 2013:176). Engaging in reflection and dialogue with other role players like spouses, mothers, aunts and mothers-in law may improve communication and understanding complexity in the context of infant feeding decisions and practices (Lazarus et al, 2013:5). Based on the study findings and through reflection, HIV-positive mothers expressed realisation that fear of disclosing their HIV status and engaging into
incorrect infant feeding practices could have jeopardized the health of their infants.

**Professional and personal development**

Tamura and Tsuda (2008) in Tashiro et al (2013:176) identified eight consequences of reflection in the field of nursing profession, some of which apply beyond the nursing profession as follows: identifying own learning needs and awareness of own behaviors, personal growth and growth out of conventional practices, empowerment, emancipation and improved quality of life. Lazarus et al, (2013:6) confirm that ideally strategies that could assist in preventing vertical transmission of HIV include reflecting on and are based on needs and realities of HIV-positive mothers.

**5.3.5. Awareness of social norms**

The concept awareness of social norms was selected because of its significance on the decisions and practices that are made regarding infant by HIV-positive mothers. Awareness of social norms was important in making and implementing decisions about infant feeding practices in the context of HIV-positive mothers. The values, culture and opinions of the larger environment, needed to be considered for infant feeding decisions and practices of the HIV-positive mothers. Awareness of such influence was essential towards sustainable emancipated decision-making processes on infant feeding in the context of HIV positive mothers (Lazarus et al, 2013:7).

Awareness of social norms is described as a woman’s awareness that society places more value on one option over another (Stepanuk et al, 2013:2497). Wittmann-Price and Bhattacharya, (2008:225) further describe awareness of social norms as a woman’s knowledge of the opinion that is held by the larger environment about the healthcare options that are available to her. The larger environment includes healthcare professionals, government healthcare
initiatives, and public opinion as well as family, friends, and community at large (Wittmann-Price and Bhattacharya, 2008:225).

Socio-cultural practices which manifested as cultural influences had a variable impact on the infant feeding decisions and practices in that for some HIV-positive mothers culture dictates the infant feeding decisions whilst it was not the case with others. The significance of negative cultural influence on the infant feeding decisions and practices warrant serious attention hence it is incorporated in the guidelines development. Compliance with infant feeding decisions requires understanding of cultural influences that might create a dilemma on the HIV-positive mothers and this variable is addressed within the guidelines to support them.

- **Determining the purpose of analysis**

The purpose of analysis of the concept awareness of social awareness was to identify all facets of its meaning and its relevance to the study in relation to the other study concepts. Analysis of this concept is also necessary in determining the extent of awareness of social norms that impact on infant feeding decisions and practices. The analysis is important for identifying the opinion of the larger environment regarding infant feeding decisions made by HIV-positive mothers. In the case of infant feeding practices and decision-making, awareness of the opinion and values of the larger environment about infant feeding plays an important role in decision-making by HIV-positive mothers (Lindner, 2014:5). Practically expressed, a family that values cultural practices which promote mixed infant feeding will not support exclusive milk feeding if the woman decides to choose it.

In this study where environmental cultural infant feeding practices dominated, the personal knowledge of the HIV-positive mothers was imperative for balance between compliance with cultural norms and decisions on infant feeding practices. Other societal norms that influenced infant feeding practices for HIV-positive mothers in this study include stigma, discrimination and non-disclosure of HIV status. Some mothers expressed their stance about social norms for the
purpose of compliance with their infant feeding decisions despite the environmental pressures (Mnyani et al. 2014:8).

- **Identifying the uses of the concept**
Since social norms emanate from what people believe, value and embrace as ideal for their social existence, their beliefs determine the practices that they engage in throughout their lives. The practices may not necessarily be good but they are grounded on what they believe is right at a given time and context. This notion is supported by Mackie, Moneti, Shakya and Denny (2015:2) who asset that what people in one’s social environment believe in, approve or disapprove whether beneficial or harmful, guide one’s behaviour or practice.

Awareness of social norms then assists in understanding the behaviors and attitudes that are upheld to decide on whether to motivate for their support if beneficial or eradication if harmful (Mackie, Moneti, Shakya & Denny 2015:2). In the context of HIV-positive mothers awareness of social norms within their environment might provide them fertile ground to base their infant feeding decisions. The example might include the consideration that breastfeeding is an acceptable form of infant feeding practice. Based on this acceptance, therefore breastfeeding should be given a priority in infant feeding decision-making. Where possible, unhealthy infant feeding practices should be avoided to gain support of the significant others.

Social norms guide one’s actions within a particular environment and promote social cohesion (Lindner, 2014:5). Social norms are also said to contribute towards attainment and maintenance of social order within a particular social group and achieve social welfare (Bicchieri & Muldoon, 2011:2). Once the social norms are understood, they may be considered in infant feeding decision-making. Where necessary social norms that impact negatively on safe infant feeding decisions and health of the infants they should be subjected to debates with the aim of eliminating them.

Social norms have significant role in individual choice because they shape individual needs and preferences and they act as criteria for selection among
available options based on common shared value system. The social norms thus tend to influence behavior based on socialization and individual’s willingness to conform (Bicchieri & Muldoon, 2011:5); Lazarus et al, 2013:6).

- **Determine the defining attributes**
  Cooperation is one of the attributes of awareness of social norms for strengthening of social order and is evident in conformity that individuals portray in decision-making. Other attributes include the following: Social norms change slowly as a result of some social interaction; Social norms manifest in actions and attitudes that are displayed and believed to be correct, acceptable and thus internalized as such and conformed to (Bicchieri & Muldoon, 2011:1-6).

Since the significant others play a vital role in the infant feeding decisions and practices for the HIV-positive mothers, it is imperative to establish harmonious relationship and be cooperative with them. Harmony within the environment of the HIV-positive mothers will enhance adherence and sustainability of the infant feeding decisions and practices. Cooperation with the significant others will create a flexible environment to review social norms that are detrimental to their infants thereby promoting HIV-free child survival, as a Global goal (WHO, 2016:1)

- **Identify antecedents and consequences**

  **Antecedents**
  Beliefs and normative expectations of the people inform the social norms that they embrace; hence they are antecedents (Bicchieri & Muldoon, 2011:7). The extent of high tight or loose the norms are, determine the influence they will have on behaviour. The loose norms may not exert much pressure to the HIV-positive mothers, for example her choice might be safe if there are no pressures about environmental norms on infant feeding. Similarly, if breastfeeding is highly valued, such values will be antecedent for her breastfeeding choice notwithstanding what her actual choice is (Gelfand, Harrington & Jackson, 2017:4). The extent of personal knowledge and empowerment about social norms within the environment where HIV-positive mother lives will determine the extent at which she applies these norms in her infant feeding decisions.
Consequences

Social order is one broad consequence of awareness of social norms as they guide behaviour thus maintaining order. If adhered to social norms induce compliance to accepted behaviour (Bicchieri & Muldoon, 2011:7). The consequences of social norms in the infant feeding practices vary across different groups. For example, in the HIV-positive mothers who depend on their significant others for survival there must be a high index of social awareness in order to comply or else she is subjected to a risk of rejection or threats (Gelfand et al, 2017:5).

Some of the participants shared experiences emanating from dependence on their significant others in which they were compelled to abide by their orders, irrespective of their choices. On the other end of the continuum, in this study, the HIV-positive mothers whose environment had no specific social norms influencing infant feeding expressed satisfaction about the infant feeding decisions made. The consequences of social awareness may therefore include conformity, obedience, threats, freedom to make informed decisions, fear and threats, as already discussed (Gelfand et al, 2017:5).

The following discussion is on the information flow for support of the HIV-positive mothers as it converges from the relevant stakeholders within their larger environment.

5.4. INFORMATION FLOW FOR SUPPORT OF HIV-POSITIVE MOTHERS

The support to the HIV-positive mothers manifests in various health care settings and context as the information flows from the larger environment towards them as primary recipients. The following diagram, figure 5.2, represents the information flow for support of HIV-positive mothers in emancipated decision-making.
Figure 5.2: The information flow for support of HIV-positive mothers
(Adapted from NICE, 2014:13).
The HIV-positive mothers as the focal point to which the support is directed receives infant-feeding support from the significant others, health care workers, lay counsellors and the community at large. These sources of infant feeding support are collectively known as a larger environment (Wittmann-Price and Bhattacharya, 2008:225).

According to Ellis (2013:14) the significant others include a family member, spouse, child, co-workers, friend and a lover by virtue of the influence they have in one’s life and behaviour. The health care workers include any person employed as a health care provider in a Maternal and Child health care facility and this includes the professional nurses. The lay counsellors include any person assigned to provide infant feeding counselling to HIV-positive mothers in a health care facility. Community includes any person within the same geographical area where the HIV-positive mothers reside and interact with then in the context of infant feeding practices.

5.5. PRINCIPLES FOR GUIDELINES DEVELOPMENT

Description of some important underlying principles for guidelines development is necessary prior to description of various steps thereof. According to the National Institute for Health and Care (2014:4) and WHO (2014:2) the guidelines development should take into cognizance various principles some of which are individually discussed and applied as follows:

- **Guidelines address areas of uncertainty and unmet need**

  This principle highlights the need for guidelines to address various needs and uncertainties, depending on what works and its financial implications (Kontoyannis, 2014:31). In the context of infant feeding practices in this study, the guidelines provided specific information to be shared with HIV-positive mothers with regard to decision-making on infant feeding practices. The provision of such guidelines allows for dissemination of emerging safe practices from the study thus promoting elimination of Mother-Child-transmission of HIV through breastfeeding (Gronseth, Woodroffe & Getchius, 2011:22). The
Counsellors and Health Care Workers derive details on what to guide HIV-positive mothers and their significant others on infant feeding decision-making.

- **Guidelines reflect the value of society and “right to health”**.
The right to health, as fundamental part of Human Rights provides the correct platform against which performance can be measured. The Human rights form the basis on which relevant user-friendly guidelines may be developed and also reflect the value of the population under study (Robinson, 2007:241; NICE, 2014:7).

In the context of this study the guidelines on support of HIV positive mothers reflect compliance with their right to access appropriate infant feeding information. Every HIV-positive mother reporting at the health care facility for Maternal and Child health care should be informed of the available infant feeding options. Such information enhances effectiveness of decisions made on infant feeding practices to eliminate Mother-to-Child-Transmission of HIV infection. The community values as enshrined in the focus group interviews data are reflected in the guidelines such as the support for breastfeeding as the best infant feeding method.

- **Guidelines should be tailored to a specific audience**.
Guidelines should focus on a specific population group, audience or situation. Such audience could include health programme managers, health care providers, patients/clients and other stakeholders (Gronseth et al, 2011:3; Iwelunmor, Ezeanolue. Airhihenbuwa CO, Obiefune MC, Ezeanolue CO & Ogedegbe GG, 2014:4).

In this study the focus for guideline development is specific to HIV-positive mothers as first-line recipients and health care workers as providers of child health services. The identified population resides in the semirural area in which access to financial resources is a challenge for many because of unemployment. HIV-positive status compounds the challenge for these mothers who have to
make infant feeding decisions that will promote HIV free child survival. The guidelines therefore provided support for decision-making on informed safe infant feeding practices.

- **Recommendations can be implemented and adapted to local settings and contexts**

Vermeulen et al, (2014:10) support this principle where they state that guidelines should be well flexible so that it can adapt to diverse settings and circumstances in the clinical practice platform. In the context of this study the participants were diverse enough to express diverse experiences and views, which shaped the nature of information used to develop guidelines. Such guidelines cater for various situations in which mothers find themselves such as those employed, unemployed staying alone and those with spouses. The guidelines details allow the HIV-positive mothers to choose the infant feeding practice suitable for the settings in which they find themselves.

5.6. CONTEXT FOR GUIDELINES DEVELOPMENT

The guidelines were based on the Wittmann-Price theory concepts (Wittmann-Price & Bhattacharya, 2008: 226) but were developed using data that emerged from the analysis of the focus group in-depth interviews and narratives derived from the main study. The Wittmann-Price theory concepts on which infant feeding guidelines were based are: **personal knowledge, empowerment, awareness of social norms, flexible environment, and reflection.**

In developing the guidelines, the findings from the study were aligned to each of the five sub-concepts of the Wittmann-Price theory. The findings of the focus group interviews, narratives and observations therefore served as sign-posts in drafting the infant feeding guidelines for support of HIV-positive mothers in infant feeding decisions and practices in this study. The themes, categories and subcategories that emerged from the analysis of the study data, from which guidelines were also developed, are summarized as follows:

- Increased access to one-on-one and ongoing counselling
• Relevant stakeholder involvement
• Improved capacity building strategies
• Confidence in decision-making
• Compliance with decisions made
• Mother-centred information

The support of HIV-positive mothers occurs during their interaction with the larger environment which includes but is not limited to the significant others, health care workers the community and lay counsellors. The interaction is influenced by the National, International and institutional infant feeding guidelines as well as the constitution of the Republic of South Africa Act, 186 of 1996 on right to health care (Nursing Act, 2005:8). The interaction is further influenced by the provisions of the 2011 Tshwane Declaration of Support for breastfeeding in South Africa, National consolidated guidelines for Prevention of Mother-to-Child-Transmission of HIV infection and the management of HIV in children and National Infant and Young Child Feeding Policy of 2013 and 2016.

The guidelines were developed in accordance with and adapted to Chinn & Kramer’s method of structuring and contextualizing theory (Chinn & Kramer, 2011:175). This method consists of the following steps:

• the purpose of guidelines;
• the assumptions;
• definition of concepts and relation statements and
• the process description and the structure of the guidelines;
• Evaluation of guidelines.

The guidelines were subjected to self-reflection by the researcher as well as the experts for evaluation, the outcome of which is presented in the end of this chapter.

5.6.1. The purpose of the guidelines

The purpose of the guidelines was to support the HIV-positive mothers to make informed and sustainable infant feeding decisions within their socio-cultural
context. The guidelines were also intended to respond to the uncertainties and the needs of the HIV-positive mothers regarding their infant feeding decision-making (Smith & Liehr, 2014:54). There is no intention to re-invent the wheel hence the WHO recommendations on infant feeding practices by HIV-positive mothers form the basis for these guidelines. Another important purpose of the guidelines is to achieve better infants health outcomes and improve access to better information on infant feeding decision-making. Guidelines were also developed to assist in making appropriate health care decisions regarding the infant feeding practices in the context of HIV (Vermeulen et al, 2014:7).

5.6.2. Assumptions

Assumptions are defined as underlying givens or various explicit and implicit beliefs that are assumed to be true in designing research process. They may be challenged philosophically but assessed empirically and they are foundational in theory development (Chinn & Kramer, 2011:78).

The assumptions on which the infant feeding guidelines were developed were elicited from the empirical information of the study following data analysis. The empirical information asserts that the infant feeding decisions and practices of the HIV-positive mothers have both negative and positive influences within their large environment. Factors such as access to one-on-one and ongoing counselling, relevant stakeholder involvement, need for capacity building and mother-centred information influence infant feeding. Inadequate information sharing when counselling the HIV-positive mothers on infant feeding, significance of relevant stakeholder involvement, need for capacity building and mother-centred information form the basis for infant feeding guidelines to support HIV-positive mothers.

The following are the assumptions on the infant feeding guidelines:

- **Assumption on the existing infant feeding guidelines**
  The researcher is mindful that guidelines on infant feeding are available globally to guide infant feeding practices internationally (WHO, 2016:1). Each Child Health Service facility should utilise such guidelines in line with facility specific health needs yet there is no evidence of facility specific guidelines.
Based on this assumption, the health facility infant feeding guidelines were developed to assist on the Child Health Care practices. The infant feeding guidelines were contextualized for the HIV-positive mothers.

- **Assumption on inadequate information sharing during counselling**
  Based on the assumption that the HIV-positive mothers lack information despite counselling that they receive the researcher included the necessary information based on the study findings. The guidelines in conjunction with the guidelines manual provide the relevant and sufficient infant feeding information for the HIV-positive mothers. Access to this information will develop confidence in their infant feeding decision-making and practices within the HIV context. The health care workers have the necessary details to provide the HIV-positive mothers relevant, needs-based information during counselling. The common questions that the HIV-positive mothers need answers on during counselling, as depicted from the study data, are addressed by the infant feeding guidelines. The guidelines provide empowerment for both the health care workers and the HIV-positive mothers on infant feeding information.

- **Assumption on relevant stakeholder involvement**
  The researcher assumes that it is significant for the various relevant stakeholders to be involved in decision-making for appropriate infant feeding practices. Significant others and the health care workers form part of the relevant stakeholders for infant feeding decisions and practices in view of their influence.

  Based on this assumption, the identified stakeholders were involved and they made invaluable contributions, which were incorporated in the developed infant feeding guidelines.

  The researcher further believes that the beneficiaries of the guidelines should be involved in their development (WHO, 2010:14; WHO, 2016:1). The guidelines were developed on the basis of the study findings and recommendations to improve infant feeding decisions outcomes as revealed by the study report. The HIV-positive mothers and professional
nurses, as beneficiaries of these guidelines, were involved as sources of data on which guidelines were based,

- **Assumption on the need for capacity building**
  Capacity building is a fundamental need for the HIV-positive mothers and the health care workers in order to influence infant feeding decisions and practices positively. Based on this assumption, detailed relevant information is provided in the infant feeding guidelines to enable the health care workers to counsel and educate HIV-positive mothers appropriately. Sufficient information included in the infant feeding guidelines should also be shared with the significant others, to ensure that they provide positive influence for HIV-free child survival (WHO, 2016:1).

- **Assumption on the mother-centred information**
  The researcher believes that the infant feeding information should be mother-centred in order to effectively support HIV-positive mothers to make informed and sustainable infant feeding decisions and practices. The context within which the guidelines will be implemented needs special consideration with regard to socio-cultural and economic dimensions regarding infant feeding practices (Department of Health, 2014:13). The health care workers should be aware of existing social norms influencing infant feeding practices in order to provide mother-centred counselling and education. Each guideline is based on the identified needs on HIV-positive mothers and recommendations made by the professional nurses.

The approach to be adopted in implementing the guidelines should be client-centred rather than health-worker centred since the clients are the primary beneficiaries of these guidelines (Department of Health, 2014:14). The latter is in accordance with the principle of Emancipated decision-making process. Based on this decision-making process, the HIV-positive mother has ability to make an informed decision once she has relevant adequate information on infant feeding.
5.6.3. Definition of concepts and relation statements

The concepts need to be fruitfully developed as they exist within a particular context in order for some word meaning to be attached to them (devos, 2011:29; risjord, 2008:2).

The following concepts were selected as the underlying phenomena in the understanding and support of the HIV positive mothers in their infant feeding decisions and practices:

- **Personal Knowledge**

  According to Duhaime’s Dictionary (2010:1) personal knowledge refers to the facts that a person has witnessed as well as something that a person witnessed or saw versus that which was learned from some other persons or source. heydon (2013:1) defines personal knowledge as that which a person gains through first hand observation or experience. Personal knowledge is defined as a woman having thought about her choice in relation to what is best for her (stepanuk et al, 2013:2497). In the context of this study, personal knowledge is that infant feeding knowledge which the hiv-positive mother has gathered through her experience on child rearing.

  Personal knowledge or the woman’s ability to know what is innately best for her is critical for achievement satisfying and emancipated decision. Personal knowledge may entail knowledge that the hiv-positive mother uses more readily and is important knowledge because it comes from the her experience (wittmann-price & bhattacharya, 2008:235). Personal knowledge may need to be assessed in more depth in women’s health care facility in order to facilitate satisfaction in the decision-making process. This includes hiv-positive mothers and their involvement in infant feeding practices.

  ➢ Relation statement concerning personal knowledge

  Personal knowledge in this study refers to the amount of information possessed by the hiv-positive mothers with regard to infant feeding. The hiv-positive mothers need personal knowledge to enable them to make informed emancipated decisions and have satisfaction with such decisions. Involvement with individuals and groups who have adequate relevant knowledge enhances
acquisition of information that is necessary to enrich their personal knowledge. This was supported by one of the findings in this study which states that the mothers expect the health care facilities to provide them with relevant adequate infant feeding information. The relevant information acquisition becomes the antecedent of personal knowledge. Consequences of good personal knowledge include effective sustainable appropriate infant feeding decision-making.

- **Empowerment**

Empowerment is defined as authority or power given to someone to do something such as transforming life and environment through education or training (Muller & Bester, 2016:432; Waite, 2006:189). It is a process of becoming stronger and more confident, especially in controlling one’s life and claiming one’s rights as a result of the power and authority bestowed upon you. It is a foundation for economic empowerment of women and economic empowerment of poor communities (van Dyk, 2012:149).

Empowerment is seen as social tenet of community organization practice in which individuals and communities are assisted to actively transform own lives and milieu. It is also a state of enabling people to critically understand social, cultural, economic and political forces in their lives. Empowerment further refers to an ability to take action at addressing any challenge thus improving their quality of life. Theories of empowerment distinguish between processes and outcomes (van Dyk, 2012:149, 153 &237).

- **Relation statement concerning Empowerment**

Health care workers need to empower mothers on infant feeding at each visit to a health facility, from pregnancy through to post delivery, through health education and counselling (van Dyk, 2012:239). Diversity and the needs of HIV-positive mothers should be considered for realistic and sustainable decisions. Individuals, groups and communities should be empowered on infant feeding
practices in the HIV-positive context in order to provide positive support. The mothers and their significant others need empowerment in communication skills, assertiveness, decision-making and self-esteem hence the guidelines provide the basis for such to be developed. Such skills would assist enhance freedom to make informed sustainable decisions (van Dyk, 2012:153).

- **Flexible environment**

A flexible environment is one that affords a woman the opportunity to enact on her choice without opposition (Wittmann-Price 2004:439, Wittmann-Price et al. 2011:464). When there is incongruence between social norms and personal knowledge, a flexible environment is necessary to facilitate an emancipated decision-making process. The Wittmann-Price Theory further speculates the possible challenges for a woman who chooses an option solely because of pressure produced by social norms. If the HIV-positive mother’s choice is incongruent with what she knows is best for her due to social pressures, dissatisfaction with the infant feeding decision will be experienced.

There is an assumption that dissatisfaction with decisions made such as infant feeding decisions and practices may lead to poor compliance (Wittmann-Price & Bhattacharya, 2008:226). A flexible environment would be the one which allows the HIV-positive mothers to freely make infant feeding decisions based on the information shared with them by the health care workers. Creation of a flexible environment is thus an important step towards attainment of satisfaction, compliance and sustainability with infant feeding decisions and practices.

- **Relation statement about flexible environment**

Child Healthcare Services should include the understanding that social norms can affect the process of decision making. In view of potential negative effect of social norms on the process of decision-making infant feeding options should be openly discussed in a flexible environment. Such openness may encourage empowerment through shared education with relevant experts and experienced people. In the context of HIV-positive mothers the oppression from her
environment in spite of her personal knowledge limit emancipated decision-making on the choice of infant feeding practices.

Some mothers in this study expressed despair leading to inappropriate feeding practices from factors such as fear of stigmatization, judgmental attitudes and socio-economic dependence. The latter hindered their insistence on chosen method for fear of loss of income and other support from significant others on whom they depend for survival. The implication of this situation is importance of empowerment of the mothers and significant others hence the guidelines provide for their capacity building.

Dialogue about dichotomy between significance of emancipated infant feeding decision-making and negative social norms on the choice of the best practice should be held with significant others. The dialogue about social norms, significance of flexibility within the environment and potential conflict between personal knowledge and social norms could assist the mother. The final outcome for such efforts is emancipated decision-making on the choice of infant feeding practices which the mother must be satisfied with. Satisfaction with decisions made becomes the consequence whilst emancipation is an antecedent (Wittmann-Price & Bhattacharya, 2008:235).

- Reflection

Reflection is viewed as a process of reviewing one’s experience of practice with an aim of describing, analyzing, evaluating and applying it in practice (Tashiro, 2013:174). It involves drawing forth cognitive and emotional information from several sources including visual, tactile and kinesthetic as well as linking a current experience to previous learnings, a process called scaffolding (Costa & Kallick, 2008:1).

Reflection may need to be measured at different times in the decision-making process depending on the healthcare issue and the urgency of the decision making (Wittmann-Price & Bhattacharya, 2008:235).

In the context of HIV-positive mothers, reflection involves consideration of the infant feeding decisions and practices in the light of what is expected of them to
prevent Mother-to-Child transmission of HIV. They may reflect on personal knowledge that they have to make informed decision against the expectations of the health care workers that they interact with. Based on the outcome of their reflection, changes may be effected in their decisions, in favour of what has been taught, based on infant feeding guidelines (Costa & Kallick, 2008:1).

➤ Relation statement about reflection
Since reflection involves linking a current experience to previous learning, the HIV-positive mothers also are at liberty to reflect on decision-making process to ponder over all factors in their environment when they made decisions. The purpose of reflecting would be to determine what they did well and what did not go well which impacts on the current infant feeding practices (Tashiro, 2013:174).

Based on the study findings HIV-positive mothers may realize that fear of disclosing and thus engaging into incorrect practices jeopardize health of their infants. In the process they may realize that they have an opportunity to advocate for their infants by adhering to the right practices chosen which eliminate HIV transmission. The outcome of reflection is the realization of the need for counselling mothers on all aspects of infant feeding for emancipated decision-making Kumar, 2016:1). The infant feeding guidelines are designed to guide the health care workers and counsellors on the content for counselling the mothers.

• Awareness of social norms
Awareness of social norms is described as a woman’s awareness that society places more value on one option over another (Stepanuk et al, 2013:2497). Wittmann-Price (Wittmann-Price 2004, p. 442) defines awareness of social norms in terms of how society places value on one or more of the alternatives being considered. According to Wittmann-Price and Bhattacharya (2008:225), awareness of social norms refers to a woman’s knowledge of the opinion that is held by the larger environment about the healthcare options that are available to her. The larger environment includes healthcare professionals, government
healthcare initiatives, and public opinion as well as family, friends, and community (Wittmann-Price & Bhattacharya, 2008:225).

In the case of infant feeding practices and decision-making, awareness of what culture says about infant feeding plays an important role. It shapes the infant feeding decision but there is a need to use personal knowledge of what is best for HIV free child survival. The nature of the environment of the HIV-positive mothers also impacts on their infant feeding decision and practices. The more flexible the environment is the more emancipated will be decision-making process. The family that values breastfeeding most will not support exclusive formula feeding if the woman decides to choose it. That situation can be viewed as oppression where the HIV-positive mothers are forced to yield to family’s social norm pressures.

- **Relation statement about awareness of social norms**

The mother’s awareness of social norms was observed in the mothers who expressed their concern where they periodically brought infants to the health care facilities, eager for infant feeding knowledge. Their expectation for information acquisition often turned out to be a disappointment in most instances because of very scanty, irrelevant or lack of information on infant feeding. The experience of bitterness, as an antecedent, is attributed to unmet needs. Awareness of social norms is an antecedent in making and implementing infant feeding decisions and practices. The impact of awareness of social norms is manifested when the mother makes an informed decision on whether to exclusively breastfeed or not in the context of HIV positive status. The cultural influence as a strong component of social norms needed consideration and the mother’s awareness of such was key towards sustainable emancipated decision-making. In an environment where cultural practices on breastfeeding dominated, the personal knowledge about such is imperative to make an informed infant feeding decision. Some mothers expressed their stance to comply with their infant feeding decisions although others changed their decisions in favour of pressures from their social norms.
5.6.4. The Process Description and Structure of the Guidelines

The process description and structure of guidelines consist of the sequence of steps taken, which culminated in the existence of specific information that constitute infant feeding guidelines for support of infant feeding practices for HIV-positive mothers. The structure indicates the pattern and components of guidelines and directs the health care workers on the implementation of guidelines.

The infant feeding guidelines are developed for use by health professionals in the PMTCT programme to support the HIV-positive mothers on infant feeding decisions and practices. The infant feeding guidelines will be used in conjunction with the available PMTCT infant feeding guidelines during the antenatal and postnatal care of HIV-positive mothers, based on the identified infant feeding needs. Existing International, National, Provincial and Institutional Infant and Young child feeding guidelines will also be incorporated during the implementation of these guidelines. Specific infant feeding information will be shared through one-on-one interaction, group discussion, demonstrations, role plays or debates.

5.6.4.1. Process description of guidelines

The infant feeding guidelines were developed in conjunction with the manual, which should be used to support the implementation of these guidelines. The purpose of the manual was to provide the details for understanding and guidance to support the implementation of the infant feeding guidelines. The provision and use of the manual is supported by NICE (2014:197) who asserts that various resources may be developed and utilised to support guidelines implementation to enhance quality. The infant feeding manual consists of the constructs from Wittmann-Price Theory on Emancipated decision-making (EDM), the expected outcomes, the related and the specific activities to support the implementation of guidelines (refer to annexure L for details) (NICE, 2014:196; Wittmann-Price, & Bhattacharya, 2008:225).
According to the manual, for each construct of the Wittmann-Price Theory there are expected outcomes, related activities and specific activities that should be performed to operationalise the guidelines in support of the HIV-positive mothers. The expected outcomes represent the intended end results of guiding the individual HIV-positive mother on infant feeding decisions and practices. The related activity is a statement that expresses the action to be executed to attain the expected outcomes. The specific activities guide the professional nurse in the Maternal and Child Health Care service facility on specific activities to embark on in demonstrating support of infant feeding practices for HIV-positive mothers.

The guidelines were developed and submitted to the experts, who consist of the Manager for the Maternal and Child Health Service facility, a sub-district Coordinator for Child Health Services and a Provincial Health Programmes Manager for PMTCT. These experts made their invaluable comments and additions on the nature of guidelines, following their critical reflection using the critical evaluation criteria adapted from Chinn and Kramer (2011:198; Aziato & Adejumo, 2015: 28). The researcher used the comments from the experts to refine the guidelines for dissemination and utilization. It is imperative to guide the end users of the infant feeding guidelines hence the implementation guidelines that are outlined in this chapter (NICE, 2014:11). The structure of infant feeding guidelines is presented in figure 5.3.

5.6.4.2. Structure of guidelines

The infant feeding guidelines are presented as a broad statement against which there are specific related activities. The specific related activities should be executed by the guidelines users in response to each guideline in conjunction with the manual, which provides the necessary support, and they are discussed as follows:

Guideline 1: Empowerment of the HIV-positive mothers to make informed infant feeding decisions in collaboration with the relevant stakeholders who influence such infant decisions and practices.
Specific related activities:

- Assess the level of infant feeding knowledge and skill possessed by individual HIV-positive mother.
- Provide the safe infant feeding options available to HIV-positive women to feed infants of HIV positive mother.
- Provide guiding conditions for formula feeding using the AFASS criteria as follows:
  - Acceptable – in terms of cultural beliefs.
  - Feasible – availability and accessibility of resources including clean running water and fuel to boil water.
  - Affordable – access to resources to purchase infant feeding formula.
  - Safe – method of preparation and cleaning of utensils are clearly understood and correctly implemented.
  - Sustainable – working mothers will be able to express breast milk and store it in cool dry places.
- Infant milk formula will always be available.
- Outline the risks and benefits of different infant feeding options available for HIV positive mothers.
- Explain benefits of exclusive breastfeeding.
- Explain how to sustain exclusive breastfeeding for the first 6 months.
- Explain mixed feeding and its effects on the infant.
- Outline steps for successful breastfeeding.
- Demonstrate the skills of putting the baby on the breast.
- Identify infant feeding support groups for HIV-positive mother to participate in acquisition of knowledge, skills and positive attitudes on infant feeding practices.
- Advise the HIV-positive mothers to come with their significant others at each visit to a health facility in order to provide appropriate infant feeding information.
- Provide safe infant feeding information to the whole community especially malepartners, grandparents and youth to enhance support for HIV-
positive mothers through a forum such as infant feeding community indaba.

- Target chronic days to educate the elders about HIV transmission from mother to child and prevention thereof.
- Community dialogues to encourage treatment adherence and disclosure and their impact on infant feeding practices, especially breastfeeding.

**Guideline 2:** Increasing personal knowledge of HIV-positive mothers with emphasis on improved access to ongoing one-on-one and group counselling, in order to enhance ability to make informed infant feeding decisions and practices.

**Specific related activities:**

- Conduct one-on-one infant feeding counselling at each visit of the HIV-positive mother to the health facility.
- Spell out risky behaviors that increase the chances of transmission (unprotected sex, poor diet) and encourage safe sex always.
- While as a country we are promoting breastfeeding because of its benefits, which outweigh the risks, teach the HIV-positive mothers about the presence of the HI-virus in the breast milk and the measures to prevent its transmission, which include lifelong ART to mothers (for viral load suppression) as well as infant prophylaxis.
- Emphasize the importance of adherence to treatment.
- Allow the HIV-positive mother to raise her concerns about infant feeding decisions then address them accordingly.
- Provide information that will assist the HIV-positive mother to sustain exclusive feeding for the first six months of life, such as exclusive breastfeeding.
- Demonstrate hygienic practices including hand washing, cleaning and disinfection of infant feeding equipment to prevent infection.

Provide information that enhances compliance with prescribed antiretroviral therapy for the mother and infant during the course of breastfeeding to promote HIV free child survival.
• Allow more sessions such as on Saturdays or Sundays, in agreement with the HIV-positive mothers, to provide needs-based infant feeding information individually and in groups.

**Guideline 3:** Creation of a flexible environment, within an atmosphere that allows freedom for HIV-positive mothers to make informed infant feeding decisions and increased access to relevant support as well as adequate, relevant information sharing.

**Specific related activities:**

• Identify the significant others, male partners, grandparents and the youth, both males and females, and infants care givers for individual HIV-positive mothers to provide counselling on cultural practices that negatively influence exclusive milk feeding.

• Assist the HIV-positive mothers to identify cultural practices that deter exclusive milk feeding in the home environment and the community.

• Provide education on cultural practices that negatively influence exclusive milk feeding to empower the HIV-positive mothers on the management of infant feeding decisions and practices.

• Ongoing in-service education on PMTCT Policy updates to health care workers to keep abreast of the latest developments in PMTCT, with emphasis on safe infant feeding.

• Display positive caring attitude during interaction with the HIV-positive mothers to promote compliance with the education given.

• Use the language that allows for free expression during interaction with HIV-positive mothers.

• Encourage disclosure to the significant others so that they can provide relevant support to the HIV positive mothers with their chosen feeding options.

• Educate the significant others to demonstrate gestures of love and understanding for the infant feeding decisions and practices of HIV-positive mothers to promote good mental health.
• Provide sessions for community dialogues which promote freedom to comply with infant feeding decisions made by HIV-positive mothers.
• Identify support needs for individual HIV-positive mothers to make infant feeding decisions.
• Advise the HIV-positive mothers to form their own breastfeeding support groups to promote breastfeeding as the ideal infant feeding method.
• Assist the employed HIV-positive mothers to employ their rights to access leave benefits to enable them to comply with infant feeding decisions.
• Express the message of encouragement for every positive achievement that are identified during interaction with HIV-positive mothers.
• Ensure availability of designated areas for expressing and storage of breast milk during working hours to ensure sustainability of the chosen option.

Guideline 4: Creation of an environment in which the HIV-positive mothers are encouraged to reflect on their infant feeding decisions and are assisted to comply and sustain infant feeding practices at each interaction with them.

Specific related activities:
• Allow the HIV-positive mothers to express their feelings about infant feeding decisions made.
• Ensure that the chosen option will not compromise the health of the exposed infants by giving appropriate advice such as adherence to prophylactic treatment for HIV.
• State to the HIV-positive mothers that their decisions are respected and valued for elimination of HIV Mother-to-Child transmission.
• Praise every positive infant feeding action performed by the HIV-positive mother to develop confidence & raise self-esteem.
• Express appreciation for commitment of HIV-positive mothers on infant feeding decisions made.

Guideline 5: Creation of awareness of social norms that influence infant feeding decisions in the environment of the HIV-positive mothers and encouraging adherence to counselling and shared information in order to resist stigmatization and rejection.
Specific related activities:

- Allow the HIV-positive mothers to express social norms that influence infant feeding decisions within their environment.
- Community engagement and involvement through dialogues to identify issues that negatively influence infant feeding and to empower them to deal with such issues.
- Provide support that will enable the HIV-positive mothers to disclose their HIV status when they are ready and it is safe to do so.
- Demonstrate acceptance of the informed infant feeding decisions made by HIV-positive mothers.

5.6.4.3. Description of the structure of infant feeding guidelines

The structure of infant feeding guidelines as depicted in figure 5.3. is presented in different shades, which were randomly selected to denote an aspect of the guidelines and is briefly described as follows:

The brown shade shows the key concepts on which guidelines are based as indicated. The green shade represents constructs, yellow represents category and the blue represents the activity to be carried out for each category. The construct denotes specific aspect of the needs to be met for each HIV-positive mother who visits the health facility. The constructs are derived from the constructs of Wittmann-Price Theory of Emancipated Decision-making, on which the study is based (Wittmann-Price, & Bhattacharya, 2008:225).

The category denotes the objective(s) to be attained to satisfy the identified need, which guides the implementers of the guidelines on what should be done under the specified category. The activity denotes the specific activities to embark on in order to attain the set objective thus satisfying the identified need. The arrows indicate the direction followed from the constructs through the categories to the activities. The arrows further align the particular construct and
The inherent need to its category and to the relevant activities to be performed to meet that need.

Figure 5.3. represents the structure of infant feeding guidelines.

<table>
<thead>
<tr>
<th>EMPOWERMENT</th>
<th>Category</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empower the HIV-positive mothers</td>
<td>Limited independence &amp; access to infant decisions &amp; support</td>
<td>Display caring attitude; Identify available support needs; Help forming support groups; Guide on maternity leave access where relevant; Provide &amp; demonstrate specific infant feeding safe methods; Display caring attitude; Use preferred language; Engage significant others; Promote Community dialogue.</td>
</tr>
<tr>
<td></td>
<td>Confidence in decision-making</td>
<td>Praise every positive infant feeding practice; Appreciate commitment to safe infant feeding practices; Promote exclusive breastfeeding practice; Use available guidelines on breastfeeding &amp; child nutrition.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PERSONAL KNOWLEDGE</th>
<th>Category</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase personal knowledge for infant feeding decisions</td>
<td>Fear of stigmatization</td>
<td>Teach all about HIV transmission from mother to infant; Encourage freedom to talk about HIV status; Encourage healthy lifestyle relevant for safe infant feeding; Encourage resistance to stigmatization; Allow the HIV-positive mother to raise her fears &amp; address them accordingly.</td>
</tr>
<tr>
<td></td>
<td>Judgemental attitude</td>
<td>Show compassion &amp; encourage disclosure of HIV status; Provide appropriate information for sustainability &amp; self-esteem. Demonstrate positive attitude throughout interaction</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AWARENESS OF SOCIAL NORMS</th>
<th>Category</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create awareness of social norms that influence</td>
<td>Socio-cultural practices and influence; Compliance with</td>
<td>Allow the HIV-positive mothers to express social norms influencing decisions; Encourage identification of cultural factors with influence; Capacitate HIV-positive mothers to avoid negative social norms &amp;</td>
</tr>
</tbody>
</table>
### REFLECTION

<table>
<thead>
<tr>
<th>Construct</th>
<th>Category</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create suitable environment for reflecting on infant feeding decisions.</td>
<td>Improved capacity building strategies; Mother-centred information guidelines;</td>
<td>Allow the HIV-positive mothers to express feelings about infant feeding decisions. State that their decisions are respected and valued for Group discussions on elimination of HIV MTCT. Praise every positive infant feeding action to instill confidence; Peer group teaching sharing best practices; Express appreciation for commitment on infant feeding decisions.</td>
</tr>
</tbody>
</table>

### FLEXIBLE ENVIRONMENT

<table>
<thead>
<tr>
<th>Construct</th>
<th>Category</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a flexible environment for infant feeding decisions;</td>
<td>Increased access to one-on-one counselling; Relevant stakeholder involvement; Environmental influence</td>
<td>Identify significant others and caregivers for counselling; Conduct one-on-one counselling at each contact; Encourage adherence to counselling information Assist in identifying negative practices that deter exclusive milk feeding; Capacitate on &amp; discourage negative environmental practices</td>
</tr>
</tbody>
</table>

**Figure 5.3: Structure of infant feeding guidelines.**

### 5.6.4.4. The Guide For Implementing Infant Feeding Guidelines

The purpose of this guide is to direct the health care workers on the step-by-step actions with regard to implementation of the guidelines for support of the HIV-positive mothers on the infant feeding decisions and practices. The guide further provides the platform for baseline assessment of the usability of the infant feeding guidelines and determining a need for modification in future (NICE, 2014:196).

The infant feeding guidelines are a compass to ensure that clear support is given to the HIV-positive mothers to promote HIV free child survival. The activities involved in the implementation guide include the orientation of the health care workers in the existence and use of the guidelines for support of the HIV-positive mothers on infant feeding decisions and practices (NICE, 2014:211).

**Orientation**

The health care workers should acquaint themselves with the infant feeding guidelines as presented on a chart together with the manual (annexure L). The focus should be on the specific activities to be performed for each guideline in
rendering support to HIV-positive mothers on infant feeding decisions and practices. During their interaction with HIV-positive mothers each health care worker first assesses the infant feeding needs of the individual HIV-positive mother, according to the guidelines. Based on the findings of infant feeding needs assessment, the health care worker performs the specific activities as outlined for each infant feeding guideline (NICE, 2014:208).

Each specific activity performed, according to the infant feeding guidelines, is clearly recorded in the Maternal and Child Health Care records that are utilized in each health care facility. The latter will provide evidence of the utilization of the infant feeding guidelines. Each health care facility may develop its own checklist for monitoring the utilization and effectiveness of infant feeding guidelines for efficiency and quality management.

5.6.5. Evaluation of Infant Feeding Guidelines

Once the guidelines have been developed, some critical questions should be addressed for critical reflection on how well the guidelines are fit for purpose and various stakeholder involvement in critical reflection enhances quality (Chinn and Kramer, 2008:234; Aziato & Adejumo, 2014:32). Critical reflection on the guidelines also allows for assessing whether the purpose of developing guidelines has been achieved. Critical reflection further leads to an understanding of how well the guidelines related to practice, research and education (Chinn & Kramer, 2011: 197).

The judgment on the worth of guidelines is based on the criteria for reflection. The criteria for critical reflection on infant feeding guidelines as adapted from Chinn and Kramer (2011:198) include clarity, simplicity, generalizability, accessibility, usefulness, adaptability and importance. The researcher and the experts evaluated the infant feeding guidelines using the aforementioned criteria for critical evaluation. The self-reflection on the guidelines by the researcher is portrayed on table 5.1 as follows:

**Table 5.1: Self-reflection on the guidelines**
<table>
<thead>
<tr>
<th>REFLECTION CRITERIA</th>
<th>SELF- REFLECTION ON THE GUIDELINES (by the Researcher)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.1.1. HOW CLEAR ARE GUIDELINES?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Semantic Clarity:</strong></td>
<td></td>
</tr>
<tr>
<td>5.1.1.1. Are major concepts defined? (Are definitions Explicit-Implicit and Inferable?)</td>
<td>The concepts are clear, well defined and well related as reflected in the description of guidelines.</td>
</tr>
<tr>
<td>5.1.1.2. Are significant concepts defined, are definitions clear?</td>
<td>Yes, they are well defined.</td>
</tr>
<tr>
<td>5.1.1.3. How general and/or specific are definitions?</td>
<td>Concepts definitions are partly general but contextualised to infant feeding</td>
</tr>
<tr>
<td>5.1.1.4. Is the amount of explanation appropriate and useful?</td>
<td>Yes, explanation is appropriate and contextual.</td>
</tr>
<tr>
<td><strong>Semantic Consistency:</strong></td>
<td></td>
</tr>
<tr>
<td>5.1.1.5. Are examples meaningful and helpful?</td>
<td>The guidelines provide substantial information for health care workers and counsellors to empower mothers with relevant information for decision-making hence they are important, essential and useful.</td>
</tr>
<tr>
<td>5.1.1.6. Are definitions consistent with one another?</td>
<td>Yes</td>
</tr>
<tr>
<td>5.1.1.7. Are the same terms defined differently?</td>
<td>No</td>
</tr>
<tr>
<td>5.1.1.8. Are different terms defined similarly?</td>
<td>No</td>
</tr>
<tr>
<td>5.1.1.9. Are implied or inferred meanings different from explicit meanings?</td>
<td>No, meanings are consistent within the context in which they are used.</td>
</tr>
<tr>
<td>5.1.1.10. Is the view of persons and environment compatible?</td>
<td>Yes, there is congruence in the views presented in the study which culminated in these guidelines.</td>
</tr>
<tr>
<td>5.1.1.11. Are competing assumptions or purposes present?</td>
<td>Competing assumptions not applicable but purposes are outlined.</td>
</tr>
<tr>
<td><strong>5.1.1.12. Are examples consistent with one another?</strong></td>
<td>Yes, where given they are consistent.</td>
</tr>
<tr>
<td><strong>5.1.1.13. Structural Clarity</strong></td>
<td>Yes, as reflected in figure 5.3.</td>
</tr>
<tr>
<td>Do all the relationships fit within the structure of the guidelines?</td>
<td>Yes, as reflected in figure 5.3.</td>
</tr>
<tr>
<td><strong>5.1.1.14. Can the order of the guidelines be comprehended?</strong></td>
<td>Yes. For each construct there is a category, which represents an outcome in common scientific language, then activities carried out to attain the outcome.</td>
</tr>
<tr>
<td><strong>5.1.1.15. Can an overall structure be diagrammed?</strong></td>
<td>Yes, as reflected in figures 5.3 in which relationship of constructs to categories and activities are displayed.</td>
</tr>
</tbody>
</table>

**REFLECTION CRITERIA**

**SELF-REFLECTION ON THE GUIDELINES (by the Researcher)**

| **5.1.1.16. Where, if any, are gaps in the flow?** | No obvious gaps, however, a prepared checklist would enable the guidelines implementers to assess usability. It has been recommended that a checklist be designed by each facility to monitor implementation and usability. |
| **5.1.1.17. Structural consistency** | Visual structures support the information that is contained within the guidelines, as indicated in figure 5.3. |
| Do diagrams and visual structures provide support or compete with one another? | |
| **5.1.1.18. Is there one structural form or several?** | There are two structural forms which complement each other. |
| If more than one form, do they complement, or compete with one another | |
| **5.1.1.19. Are there any ambiguities as a result of sequence of presentation?** | Presentation sequence provides adequate guidance, no ambiguity elicited. |

**5.1.2. HOW SIMPLE ARE THE GUIDELINES?**

| **5.1.2.1. How many relationships are contained within the guidelines?** | A table is presented to enhance simplicity and understanding relatedness of concepts as described in the infant feeding guidelines. |
5.1.2.2. How are relationships organized?  | The guidelines are closely linked and related to their clinical significance and they impact on the practice, education and research.
---|---
5.1.2.3. Are some concepts differentiated into sub-concepts and others not?  | All concepts within the guidelines are aligned to their categories and their activities, in an orderly manner.
---|---
5.1.2.4. Can concepts be combined without losing guidelines meaning?  | The concepts relate to one another to produce the required support, no need to combine them.
---|---

**REFLECTION CRITERIA**

**SELF-REFLECTION ON THE GUIDELINES (by the Researcher)**

5.1.2.5. Are guidelines complex in some areas and not in others?  | The simplicity of guidelines is evident in that all concepts are well defined and contextualized. A table is also presented to enhance simplicity and understanding relatedness of concepts as described in the infant feeding guidelines.
---|---
5.1.2.6. Do the guidelines tend to describe, explain or predict?  | More directional as reflected, particularly in the activities.
---|---
5.1.2.7. Do the guidelines impact understanding?  | Yes. It needs an implementer have understanding of simple instructions as guidelines direct action.
---|---
5.1.2.8. Do the guidelines create meaning?  | Yes in that the statements are clear and simple to understand.
---|---

**5.1.3. HOW GENERAL ARE THE GUIDELINES?**

5.1.3.1. How specific are purposes of guidelines?  | Guidelines are adaptable as they can be applied an altered environmental situation (Sullivan & Schmitz, 2016:11).
---|---
5.1.3.2. Do guidelines purposes apply to all or only some practice areas?  | Although they are mainly for use in Primary Health Care facilities for PMTCT program implementation, they are generalizable in all health care settings for Mother and Child Health Care services.
---|---
5.1.3.3. Are guidelines specific to nursing?  | Guidelines are developed for use by Professional Nurses as part of Community Health workers in Maternal And Child Health units.
---|---
5.1.3.4. Is the purpose justifiably a nursing purpose?  | The purpose is a nursing purpose because the HIV-positive mothers interact with nurses during their visit to Maternal and Child Health Services facilities.
---|---
5.1.3.5. If sub-purposes Not applicable as there are no sub-purposes.
exist, do they reflect nursing actions?
How broad are the concepts within the theory?

5.1.4. HOW ACCESSIBLE ARE THESE GUIDELINES?

| 5.1.4.1. Are the concepts broad or narrow? | The infant feeding guidelines are clearly displayed and accessible to all the health care workers for implementation. |

REFLECTION CRITERIA

<table>
<thead>
<tr>
<th>SELF- REFLECTION ON THE GUIDELINES (by the Researcher)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1.4.2. Are concepts within the realm of nursing?</td>
</tr>
<tr>
<td>5.1.4.3. Do the definitions provided for the concepts adequately reflect their meaning?</td>
</tr>
</tbody>
</table>

5.1.5. HOW IMPORTANT ARE THE GUIDELINES?

| 5.1.5.1. Do the guidelines have potential to influence nursing practice?? | The infant feeding guidelines are important because they direct practice in Maternal and Child Health Services. |
| 5.1.5.2. Do the guidelines guide-Nursing Education? Nursing research? | In Nursing Education the infant feeding guidelines are useful in that they can be adaptable in the Curriculum for Community Nursing Science to equip the neophytes with specific health education information for HIV-positive mothers. |
| 5.1.5.3. Will the use of guidelines help or hinder nursing in any way?, if so, why | The guidelines will close the gap of inadequate information received by HIV-positive mothers at the Maternal and Child Health Care facilities |
| 5.1.5.4. Will implementation of these guidelines resolve any important issue/problem in nursing? | The infant feeding guidelines provide substantial information for health care workers and counsellors to empower mothers with relevant information for decision-making hence they are important, essential and useful. |
| 5.1.5.5. Are the guidelines futuristic and forward looking? | Yes because they aim at providing HIV-free child survival. |
| 5.1.5.6. Will the research, based on the guidelines, | The purpose of the guidelines, to provide support to HIV-positive mothers in their infant feeding practices responds to concerns of these |
answer important questions? mothers. The concerns were raised as the study was conducted, hence the need for these guidelines.

The reflection on guidelines by the experts is portrayed on table 5.2. as follows:

**Table 5.2: Reflection on the guidelines by the experts**

<table>
<thead>
<tr>
<th>REFLECTION CRITERIA</th>
<th>EXPERTS’ REFLECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.2.1. Semantic Clarity:</strong></td>
<td></td>
</tr>
<tr>
<td>5.2.1.1. Are major concepts defined?</td>
<td>Yes they are clearly defined and easy to understand.</td>
</tr>
<tr>
<td>(Are definitions Explicit-Implicit and Inferable?)</td>
<td></td>
</tr>
<tr>
<td>5.2.1.2. Are significant concepts defined, are definitions clear?</td>
<td>Yes</td>
</tr>
<tr>
<td>5.2.1.3. How general and/or specific are definitions?</td>
<td>Most definitions are specific to safe infant feeding</td>
</tr>
<tr>
<td>5.2.1.4. Is the amount of explanation appropriate and useful?</td>
<td>It is appropriate and useful especially to HIV positive mothers and health workers.</td>
</tr>
<tr>
<td>5.2.1.5. Are examples meaningful and helpful?</td>
<td>Yes they are simplified for easy understanding and all the basic examples are there.</td>
</tr>
<tr>
<td>5.2.1.6. Semantic Consistency:</td>
<td></td>
</tr>
<tr>
<td>Are definitions consistent with one another?</td>
<td>Yes</td>
</tr>
<tr>
<td>5.2.1.7. Are the same terms defined differently?</td>
<td>No</td>
</tr>
<tr>
<td>5.2.1.8. Are different terms defined similarly?</td>
<td>No</td>
</tr>
<tr>
<td>5.2.1.9. Are implied or inferred meanings different from explicit meanings?</td>
<td>No</td>
</tr>
<tr>
<td>5.2.1.10. Is the view of persons and environment</td>
<td>Yes</td>
</tr>
<tr>
<td>REFLECTION CRITERIA</td>
<td>EXPERTS’ REFLECTION</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>5.2.1.11. Are competing assumptions or purposes present?</td>
<td>No</td>
</tr>
<tr>
<td>5.2.1.12. Are examples consistent with one another?</td>
<td>Yes</td>
</tr>
</tbody>
</table>
| **5.2.1.13. Structural Clarity**  
Do all the relationships fit within the structure of the guidelines? | Yes |
| 5.2.1.14. Can the order of the guidelines be comprehended? | Yes |
| 5.2.1.15. Can an overall structure be diagrammed? | Yes |
| 5.2.1.16. Where, if any, are gaps in the flow? | Nil identifiable. |
| **5.2.1.17. Structural consistency**  
Do diagrams and visual structures provide support or compete with one another? | Yes |
| 5.2.1.18. Is there one structural form or several?  
If more than one form, do they complement, or compete with one another | The given structures complement each other. |
| 5.2.1.19. Are there any ambiguities as a result of sequence of presentation? | No |
5.2.2. HOW SIMPLE ARE GUIDELINES?

<table>
<thead>
<tr>
<th>5.2.2.1. How many relationships are contained within the guidelines?</th>
<th>There are five concepts that are contained in the guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2.2.2. How are relationships organized?</td>
<td>Information is orderly written.</td>
</tr>
<tr>
<td>5.2.2.3. Are some concepts differentiated into sub-concepts and others not?</td>
<td>Concepts relate to their categories and activities.</td>
</tr>
<tr>
<td>5.2.2.4. Can concepts be combined without losing guidelines meaning?</td>
<td>Yes if necessary.</td>
</tr>
<tr>
<td>5.2.2.5. Are guidelines complex in some areas and not in others?</td>
<td>Guidelines are simple</td>
</tr>
<tr>
<td>5.2.2.6. Do the guidelines tend to describe, explain or predict?</td>
<td>They are describe and explain clearly expected outcomes and specific activities to be carried out.</td>
</tr>
<tr>
<td>5.2.2.7. Do the guidelines impact understanding?</td>
<td>Yes, they are simple enough to understand.</td>
</tr>
<tr>
<td>5.2.2.8. Do the guidelines create meaning?</td>
<td>Yes they are meaningful.</td>
</tr>
</tbody>
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5.2.3. HOW GENERAL ARE THE GUIDELINES?

| 5.2.3.1. How specific are purposes of guidelines? | Purpose of guidelines is clearly stated. |
| 5.2.3.2. Do guidelines purposes apply to all or only some practice areas? |  |
| 5.2.3.3. Are guidelines specific to nursing? If not, who else could use them, & why? | Yes, they talk to nurses to support the mothers who are HIV positive. |

REFLECTION CRITERIA | EXPERTS’ REFLECTION
--- | ---
5.2.3.4. Is the purpose justifiably a nursing | Yes, the nurses are the ones caring for the women during pregnancy and after delivery. |
<table>
<thead>
<tr>
<th><strong>purpose?</strong></th>
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<tbody>
<tr>
<td>5.2.3.5. If sub-purposes exist, do they reflect nursing actions?</td>
<td>None exists.</td>
</tr>
</tbody>
</table>

### 5.2.4. HOW ACCESSIBLE ARE THESE GUIDELINES?

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<tbody>
<tr>
<td>5.2.4.1. Are the concepts broad or narrow?</td>
<td>Broad</td>
</tr>
<tr>
<td>5.2.4.2. Are concepts within the realm of nursing?</td>
<td>Mostly on nursing but lacks the community engagement activities</td>
</tr>
<tr>
<td>5.2.4.3. Do the definitions provided for the concepts adequately reflect their meaning?</td>
<td>Yes</td>
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</table>

### 5.2.5. HOW IMPORTANT ARE THE GUIDELINES?

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<tbody>
<tr>
<td>5.2.5.1. Do the guidelines have potential to influence nursing practice??</td>
<td>Yes because they clarify actions to be employed by health care professionals in order to effectively reduce mother to child transmission through safe infant feeding</td>
</tr>
</tbody>
</table>
| 5.2.5.2. Do the guidelines guide-Nursing Education? Nursing research? | Yes – on relevant information to be provided to mothers and the community at large  
Yes, research in terms of new effective strategies to further reduce the risk of mother to child transmission. |
| 5.2.5.3. Will the use of guidelines help or hinder nursing in any way?, if so, why? | If properly implemented, they will make a great impact |

### REFLECTION CRITERIA

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<tr>
<td>5.2.5.4. Will implementation of these guidelines resolve any important issue/problem in nursing?</td>
<td>Yes especially the myth that HIV positive mothers should not breastfeed but they can do safe infant feeding</td>
</tr>
</tbody>
</table>
5.2.5.5. Are the guidelines futuristic and forward looking?  
Yes

5.2.5.6. Will the research based on the guidelines answer important questions?  
Yes however focus is mostly on the HIV positive mothers more than anybody else

The following discussion presents the comments made by the experts following the evaluation of the infant feeding guidelines. External review of guidelines by experts is necessary for quality assurance and the experts can be members of the Department with expertise on the content of guidelines (NICE, 2014:188). The infant feeding guidelines were evaluated by three experts who reviewed them and presented their critical reflection as summarized in table 5.2. Each expert was electronically given the criteria separately, after consultation and clear explanation on the use of such criteria. They were The comments were incorporated into the guidelines accordingly and are described for each of the experts as follows:

- **Expert One**: An Advanced Midwife who was a Manager in charge of one of the regional hospital Maternity Department and leading Perinatal reviews. This reviewer provided the expertise with regard to ante-partum and intra-partum and post-partum context of Prevention of Mother-To-Child-Transmission (PMTCT) of HIV. She highlighted the following aspects to be included into the infant feeding guidelines and they were included accordingly:
  - Mothers lack knowledge on infant and young Child feeding;
  - All pregnant women should be empowered on PMTCT issues to influence their decision on infant feeding options;
  - The guidelines are going to help in achievement of better health outcomes and to assist in decision-making on infant feeding;
  - The structure of the guidelines is in line with World Health Organization (WHO) National Institute for Health
Health Workers should be updated with information on PMTCT and infant and Young Child feeding

**Expert two:** A Provincial Health Programmes Manager for Prevention of Mother-To-Child-Transmission of HIV infection. In her comments, this reviewer added the following points into the guidelines, all of which were incorporated accordingly into the developed infant feeding guidelines:

- Provide the safe infant feeding options available to HIV-positive women;
- AFASS criteria (WHO, 2016:8) are as follows:
  - Acceptable – in terms of cultural beliefs
  - Feasible – resources including clean running water, fuel to boil water
  - Affordable – resources to purchase formula
  - Safe – method of preparation and cleaning of utensils
  - Sustainable – working mothers will be able to express breast milk and store it in cool dry places.
  - Formula will always be available
- Outline the risks and benefits of different infant feeding options available for HIV positive mothers.
- Explain how to sustain exclusive breastfeeding for the first 6 months.
- Provide safe infant feeding information to the whole community especially males, grandparents and youth to enhance support for HIV-positive mothers. Especially male partners, grandparents, and the entire community.
- Target chronic days to educate the elders about HIV, its transmission, transmission from mother to child and prevention thereof.
- Community dialogues to encourage treatment adherence and disclosure.
- Spell out risky behaviors that increase the chances of transmission such as unprotected sex and poor diet then encourage safe sex always.
- As a country we are promoting breastfeeding because of its benefits which outweigh the risks, however they are taught about the presence of the HI-virus in the breast milk which and measures to prevent its transmission, which is: Lifelong ART to mothers (for viral load suppression) as well as infant prophylaxis.
Emphasize the importance of adherence to treatment.

Ongoing in-service education or PMTCT Policy updates to health care workers to keep abreast of the latest developments PMTCT including safe infant feeding.

Encourage disclosure to the significant others so that they can provide support to the HIV positive mothers with their chosen feeding option.

Designated areas for expressing and storage of breast milk during working hours to ensure sustainability of the chosen option.

Ensure that the chosen option will not compromise the health of exposed children and give appropriate advice.

Community engagement and involvement through dialogues to identify issues that negatively influence infant feeding and empower them to deal with such issues.

**Expert three:** A Senior Professional Nurse who is experienced in Neonatal Nursing and working in a well-performing Mother-friendly and Baby-friendly hospital initiative unit. In her comments this reviewer focused on the neonate and infant with regard to infant feeding and highlighted the following aspects:

- All Child Health Care facilities should have guidelines on infant feeding;
- The guidelines should identify and define the key concepts such as exclusive breastfeeding, formula feeding. PMTCT and mixed feeding, however, these concepts are defined within the study and are addressed by the guidelines though they are not discussed explicitly.
- The guidelines should also be in line with the National consolidated guidelines for PMTCT and the management of HIV in children and the Tshwane Declaration;

5.7. **CONCLUSION**

In this chapter the infant feeding guidelines were developed for support of HIV-positive mothers in their infant feeding decisions and practices. The relevant concepts were identified and analyzed within the context of the study purpose.
and the researcher critically reflected on the developed guidelines. The infant feeding guidelines were reviewed by the experts in Maternal and Child Health Care, Prevention of Mother-To-Child-Transmission of HIV infection and in the development of Maternity guidelines. Inputs from the reviewers were incorporated accordingly to make the guidelines contextually appropriate. The next chapter is on the summary, limitations and recommendations and is the last chapter.

CHAPTER 6

SUMMARY, LIMITATIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter provides the conclusions drawn from the study. Limitations that were identified during the study are also presented. Recommendations for education, practice, and research are also made based on the conclusions drawn from the study.
6.2 PURPOSE OF THE STUDY

The purpose of the study was to explore the experiences of HIV-positive mothers about their choices regarding infant feeding practices, as well as to develop guidelines to support them in such choices, within the rural communities in the Mbombela Municipality of Mpumalanga Province. The study successfully explored the experiences of HIV-positive mothers, their significant others, and the views of professional nurses through data collected from them.

6.3 OBJECTIVES OF THE STUDY

The objectives of the study were as follows:

PHASE 1: Objective 1: To explore and describe the experiences of HIV-positive mothers about their decisions regarding the choices of infant feeding practices.

Central interview questions and probing questions were used to explore the experiences of the mothers and the significant others. They were each exposed to focus group interviews to express their experiences, views, and recommendations in response to interview questions and probing. The views and experiences of the HIV-positive mothers and their significant others were explored, described and analysed culminating in themes, categories and sub-categories as presented in chapter 4.

Objective 2: To explore and describe the views, personal knowledge, and reflection of significant others regarding the decisions of HIV-positive mothers on their choice of infant feeding practices.

Through the focus group in-depth interviews the significant others expressed their views, personal knowledge and reflection regarding infant feeding decisions and practices of HIV-positive mothers. The data from the focus group in-depth interviews were gathered, analysed, interpreted and incorporated into the developed infant feeding guidelines.
Objective 3: To explore and describe the views, personal knowledge, and reflection of professional nurses regarding the decisions of HIV-positive mothers on their choice of infant feeding practices.

To achieve this objective, the narratives were collected from the professional nurses, which elicited data on their views, personal knowledge and reflection on infant feeding decisions and practices of HIV-positive mothers. The data also yielded the recommendations of the professional nurses, which contributed to the content of the developed infant feeding guidelines.

PHASE 2: Objective 4: To document the kind of support required by HIV-positive mothers on their choices of infant feeding practices.

This objective was achieved because the support required by the HIV-positive mothers with regard to their infant feeding choices and practices was clearly expressed during focus group in-depth interviews and documented in chapter4.

PHASE 3: Objective 5: To develop guidelines to support HIV-positive mothers to make emancipated decisions regarding their choice of infant feeding practices in the Mbombela Municipality of Mpumalanga Province.

This objective was well achieved as evident in the infant feeding guidelines that have been developed as presented in chapter5. Guidance on the implementation of infant feeding guidelines has also been provided, as outlined in chapter5.

6.4 SUMMARY OF THE STUDY

The conclusions of the study are documented in relation to the research objectives. The research questions were posed in order to attain the purpose and objectives of the study, as indicated above. The support of HIV-positive mothers to make emancipated infant feeding decisions is the key in all the stated objectives.
The mother’s decisions should support the strategy for HIV prevention, as determined by International and National infant feeding policies. Such policies include, among others, the 2013 South African Infant and Young Child Feeding (IYCF) policy. This policy defines evidence-based actions that should be taken to protect, promote, and support optimal safe-feeding of infants and young children (Department of Health, 2013:10). According to the IYCF policy, early initiation of breastfeeding, within the first hour of birth could prevent 22 per cent of neonatal deaths, breastfeeding is a key child survival strategy in resource-poor countries (NDoH, 2013: 39).

In a study conducted in Ghana (2011), some participants expressed a belief that some families welcomed a new born baby by giving it water and some herbal mixture orally. They believed that this would make the baby officially belong to that family. It is also believed that such a practice helps the baby be strong in order to fight against evil spirits (Laar & Govender, 2011:2). In the latter situation, mixed feeding is practiced in the name of tradition and social beliefs, yet it contributes to infant mortality. The topics discussed and summarised below represent the questions which were asked during the focus group interviews as well as narratives.

6.4.1. HIV-positive mothers’ experiences on infant feeding decisions and practices
The central question for HIV-positive mothers was: What is your experience, as a mother, with regard to decision-making on your choice of infant feeding methods? Such experiences applied to her home, health facilities, and community. The aim of this question was to explore experience and skills in decision-making regarding infant feeding methods. In order to elicit specific information based on this question, probing questions had to be used. The discussion will be confined to their responses to the probing questions as follows:

6.4.2. Socio-cultural Practices and Cultural Influences
These categories aimed to elicit the mother’s awareness of social norms influencing infant feeding practices. This study revealed that there was minimal cultural influence on decisions made regarding infant feeding on both maternal and paternal sides of the families. Some guidance was given, mostly from the maternal side, especially by mothers and grandmothers. This was probably because most of the participants were unmarried and staying with their mothers and grandmothers. Such guidance included being told how good breastfeeding was, hence the decision to breastfeed. In the absence of cultural influence, the mothers chose breastfeeding, giving the following reasons:

- They were told by the staff of the clinic that breast milk, unlike formula, is good and is a medicine;
- They could not afford formula because of unemployment;
- A clinic taught them to choose breast or bottle milk;
- Breast milk is always there, warm and protected and therefore prevents access to flies, it is also important for bonding, and protects against flu
- With breast milk they can produce milk if going away, whereas bottle feeding needs feeding bottles, which are costly and requires luggage space when one is travelling.

Some mothers expressed some family norms which influenced their decisions on their choice of infant feeding methods, stating the following reason among others: They were told at the paternal home of the infant that they must give milk and solids immediately after birth as a family culture, stating that their babies eat a lot. This perpetuated mixed feeding, which contributes to the Mother-to-Child Transmission of HIV.

It was also surprising that some choices are based on emotions, in which one mother indicated that she chose bottle feeding to let the spouse feel the pinch of buying formula. This was expressed as a revenge for ill-treatment received from her spouse. All mothers or caregivers of infants and young children need support with infant and young child feeding. At a community level breastfeeding promotion, support, and protection should be a key component in regard to the work of community health workers and primary health care teams (Department of health, 2013:24).
Some interesting information was elicited from the mother whose culture prohibits breastfeeding if the baby’s father is not similar to the father of the first baby. This influenced her choice of bottle feeding. Another participant expressed that a cultural influence was an avoidance of breastfeeding if a baby follows a previous child who died, irrespective of the cause of death.

The choice of formula feeding was not influenced by any culture but was motivated by the following factors as presented in this study:

- Fear of HIV transmission through breastfeeding.
- Employment, which made it difficult for the mothers to continue breastfeeding when gone to work far away from the infant.

Although there was no cultural influence in decision-making in regard to infant feeding methods, there were social norms that motivated the decision-making process as discussed above.

### 6.4.3. Environmental influence

- This category aimed at eliciting personal knowledge about available infant feeding choices as manifested by reaction of friends, family and community. The response of participants indicated that HIV–positive mothers prefer not to disclose their status, particularly to friends, some family, and community members. The motivation for this preference was a fear of stigmatisation and judgmental attitudes.
- The mothers’ experiences demonstrated judgmental attitudes from their friends. This manifested in negative attitudes from friends who concluded that they are HIV-positive when they saw them bottle-feeding. They call the mothers names which include being called fools for not mix-feeding when they exclusively milk feed. Some spouses and family members complained that mothers practice formula feeding, which is expensive.
• Complaints emanate from a lack of understanding of the motives for choices made. Friends watch to see whether the mother will continue breastfeeding after six months. This emanates from a belief that after six months some HIV-positive mothers discontinue breastfeeding for fear of HIV transmission. In communities where mixed-feeding is a norm, friends suspect positive HIV status if the mothers do not mix-feed.

• Some friends question formula feeding, saying that it is not good because it is expensive, while others discourage breastfeeding. Generally, friends mislead, in that they have personal and diverse views that are sometimes contradictory. This leaves the HIV-positive mothers with one option, to make emancipated informed, independent, and sustainable infant feeding decisions. This is possible if the mother has adequate information and is motivated to eliminate a mother-to-child transmission of HIV.

• Some HIV-positive mothers had not disclosed their HIV status to all family members for fear of judgmental attitudes. This led the mothers’ families to discourage them from bottle feeding for lack of money to buy milk formula. Some spouses and other family members discouraged formula feeding, stating that it is expensive especially because they are unemployed. Regarding breastfeeding, there was understanding, expressed support, and encouragement from close family members, especially those living with HIV.

• The community supports breastfeeding, according to the responses to this question. The reasons expressed included the benefits of breastfeeding, namely, its protection against diseases and the early detection of diseases. The participants in this study expressed that their HIV status was not disclosed to their communities. Based on this, the community’s views to infant feeding practices had no reference to the mother’s HIV status.

At every visit, assess and counsel mothers regarding feeding practices and discourage mothers from introducing other foods and fluids before end of six months of life (Department of health, 2013:20).
6.4.4. **Limited independence**

The aim of this category was to elicit the extent of flexibility, within the environment where infant feeding decisions are made, for the mother to effect changes where necessary. The ability to change the chosen method was an indication of level of independence to make infant feeding decisions. In instances where the mother could not make independent decisions due to pressure from various sources, it becomes necessary to revisit and change her decisions (Stepanuk et al, 2013:2471). She should be flexible within the environment in which she stays.

In this study some participants had no difficulty while others found it hard to change because of the reasons which include the following:

- They were told by a clinic to choose a particular method, not the other, and to use it exclusively for six months.
- Working far from home makes it difficult to change to breastfeeding.
- Mothers-in-law who support them financially and otherwise influenced the choice of infant feeding method.
- A clinic made choices for her infant feeding methods and specifically told her not to change in order to prevent HIV transmission.
- The comfort of the infant with regard to the method used prevented her from changing.

The environment of the HIV-positive mothers was relatively flexible in that some of them found it easy to change their initial decisions on infant feeding practices. However, the conditions surrounding the decision-making for others limited them from changing, as cited above. Coupled with these conditions was the limited emancipation and independence in making such decisions resulting from control by clinic, family, and economic pressures.

6.4.5. **Fear of stigmatization**

This category explored the feelings experienced by the HIV-positive mothers, after making infant feeding decisions independently, to elicit a reflection on negative or positive feelings. Mixed feelings were depicted. Participants mostly
felt well, satisfied, and free on their methods of choice, which they expressed that they were not forced to make. Some regretted the choice made, which was based on personal challenges, and after which it was not easy to reverse those choices. There were also those who felt well but were forced into certain methods by employment away from home and by advice from the health facilities.

There was uncertainty and fear for other members who were not sure whether they made the right decisions or not, and whether they would get approval from significant others or not. In other instances the mothers were worried about uncontrollable mixed feeding by significant others. They were especially concerned about the impact that this had on the infant with regard to HIV transmission. For others there was uncertainty on how their HIV positive status would affect their infants as they breastfed them, and how to continue feeding the baby after six months of exclusive breastfeeding.

The support from significant others contributed to positive feeling about decisions made. This was expressed by some remarks which included the following:

*Although scared at first, she was happy that the mother-in-law made it easy by suggesting formula feeding, which she had already chosen.*

Empowerment for decision-making occurred but there was insufficient information to sustain the decisions made because they were uncertain on how to feed the infant beyond six months. Adequate information and the availability of guidelines are imperative for HIV-positive mothers to have adequate empowerment to make sustainable infant feeding decisions.

There was expressed commitment to comply with the demands of either method chosen, including keeping milk fresh and free from contamination in the case of formula milk feeding. In one study done on African, American and white women, one participant stated that she believed that her decision was independent
because she was the first in her family to differ by making a decision to breastfeed without family influence (Street & Lewallen, 2013:43-51)

6.4.6. Relevant stakeholder involvement

This category aimed to determine the assistance and guidance that is expected from the family, community, and staff of health facilities, like a clinic. From the family, the kind of support needed ranged from the procurement of milk formula, material needs for the infant, and food products for her, to being there for her, including loving her. For some HIV-positive mothers it was important to persuade spouses to get HIV tests done. This was not directly related to infant feeding decisions but it was an indication of the diversity of help needed by the mothers who needed proper channeling and a multidisciplinary approach to assist them.

The referral route became a significant aspect in handling infant feeding matters to ensure a comprehensive approach to health care service delivery. Once all other needs are satisfied, infant feeding practices are maximised with better infant feeding outcomes. Another aspect raised was a need for more information on infant feeding practices, which included the following:

- Whether there is any other food to give the child while milk feeding the infant.
- What solid foods to give the infant after six months.
- How to prepare formula feeding
- How to keep feeding bottles clean
- Whether formula feeding can be stopped at any time.
- Any other suitable advice for HIV-positive mothers.
- How to give baby care.

Regarding the help from health facilities, a lot came up and indicated that there was a great need for adequate time to share information with HIV-positive mothers, who are usually inexperienced in infant feeding. This included setting
aside weekend days, like Saturday, for teaching as it is not busy. The following were some of the clinical teaching needs that were expressed:

- How to breastfeed.
- How to continue feeding babies on chosen methods even after six months.
- What solid food is good for babies and at what age is it safe for them to give.
- How to prevent bottle feeding problems.
- Baby care.
- Access to formula milk for those in dire need.
- What mothers must eat to support infant feeding practices.
- Thorough assessment of infants during child care service, not just weight checks, to exclude feeding problems.

The needs expressed are quite diverse and not often met during child health care visits. This calls for more teaching and counselling time for the challenging positive HIV status and infant feeding. This will eliminate mothers’ fears and concerns centred around HIV transmission through infant feeding practices. The clinics need mother-friendly strategies to address these needs. Consideration of given recommendations as incorporated in the formulated guidelines will reduce this burden. All mothers who may still decide not to breastfeed after counseling and education, and who meet all of the specific conditions, should be educated and given information on age specific types of infant formula to purchase and shown how to prepare and use formula foods safely. The infant feeding education should be provided individually whilst maintaining privacy and confidentiality (Department of health, 2013:15).

6.4.7. Access to Infant Feeding Support

The aim of the category was to elicit what infant feeding assistance the HIV-positive mothers received from their family, community and health facilities. The support from their family ranged from getting formula milk, when needed, to
encouragement on various aspects. Others expressed a lack of support, stating different reasons which included not disclosing their HIV status and staying only with their spouses. Specific infant feeding support included buying formula for the infant, buying food for the mother to breastfeed, and encouraging her to have time to feed her infant.

From the community some mothers stated no help was provided, while others stated that they were provided with vegetables, food parcels, and clothes. Most participants with no help from community stated that they kept their HIV status a secret from the community, hence they would not expect specific infant feeding support.

There was an alarming expression of a lack of help from clinics yet that should be the main source of infant feeding assistance. Some participants said that at clinics there is no help, they were asked only what the baby was feeding on. Others mentioned that at clinics, they taught them to exclusively milk feed and give solids at six months and how to clean bottles and take care of the baby. Ambiguous expressions were presented in explaining what infant feeding help was given, which included how to take antiretroviral medicine. This was an indication of the lack of substantive information given at the clinic regarding infant feeding practices. It is the responsibility of all staff to facilitate a positive and supportive environment for breastfeeding at all times (Health Service Executive, 2015:6).

Another kind of help which was elicited was the need for information to be given to the HIV-positive mothers with regard to administration of the medication prescribed for them. There was lack of specific information on types of solids to be given and a time for giving them. The participants also expressed that, at the clinic, there is no help except the weighing of infants, there are no classes. Mothers, babies, and visitors attending the clinics should be supported in whatever way is possible (Health Service Executive, 2015:16).

6.4.8. Confidence in Decision-making
The following were some of the views expressed by significant others regarding the basis for HIV-positive mothers’ infant feeding decisions:

- She chose bottle-feeding because she wanted to return to school after the delivery of the child.
- The fear of transmitting HIV to the infant led to formula milk feeding, not breastfeeding.
- They were guided by clinics where classes were given on how to keep feeding bottles clean.

These responses indicate that the information given to the participants motivated them more to use formula feeding instead of breastfeeding. This could mean that fear rather than clear information was instilled, hence formula milk feeding seemed to be the mothers’ answer to prevent HIV MTCT. Mothers, babies, and visitors attending the services should be supported to feed their babies in all public areas of the facility. Ideally, a place should be provided for mothers to have privacy while breastfeeding (Health Service Executive, 2015:16).

The expectations of the significant others for the HIV-positive mother regarding infant feeding included:

- her commitment to take good care of and to love her infant as advised.
- allowing the baby to grow, be well, and healthy.
- to comply with all help given at home and at the clinic, such as hand washing and correct food preparation.

Some of the significant others found their daughters and daughters-in-law meeting this expectation but for others it was hard where their daughters displayed signs of resistance to guidance and assistance offered. Some of the significant others could not stand this resistance and thus expressed harsh words, which included that their daughter might as well leave the infant with them if she was not prepared to comply. This was a clear sign of intensive counselling needed for both parties in order to deal with challenges expressed. This service could only be identified where thorough assessment of infant and mother was done during clinic visits.
Infant feeding decisions can only be sustainable if the mother is psychologically sound enough to deal with untoward feelings and to cooperate with people who offer help. This was a gap identified during the study, which needed specialty services of a professional counsellor, hence in such cases the researcher referred participants accordingly for consultation. HIV-positive mothers who decide not to breastfeed their infants should be counselled on appropriate exclusive formula feeding with regard to the amount and frequency for optimal growth and development (National department of health, 2015:87).

6.4.9. Compliance with Decisions made

The help given to HIV-positive mothers included assisting to prepare formula milk and ensuring that it was served warm to prevent illnesses although there was no money to assist in buying formula milk for the infant.

Some participants were also encouraged to accept their HIV status, not to feel guilty, and to disclose to people of their choice, not friends. Guidance on proper care of feeding utensils was also given to prevent exposure to infections.

The assistance given was based on the observed need by significant others. The information on HIV status, if disclosed, gave direction on the specific assistance to be given, hence significance of disclosing to significant others.

There was expressed disappointment from some significant others because of a lack of obedience from their daughter regarding given guidance on infant feeding. However, that was not a direct response to the given question, but it is noted because of its impact on given support. The best support needed is to make the HIV-positive mother free, she must not worry or be angry, or involved in the house chores, thus keeping her focus off the HIV status.

6.4.10. Mother-Centred Information Guidelines

Mainly the guidance on safe infant feeding measures was given to the mother by the family, and it includes the following:
• Instruction to care for the infant and to give attention when the infant is crying instead of ignoring the cry.
• Proper methods of preparing formula milk using correct calculations and washing the feeding bottles properly at all times.
• Buying necessities for the infant, including formula milk and pampers. Some mothers also received support of the family in the form of love and entertainment. Although these are not directly associated with infant feeding, they help keep the mother’s mind relaxed enough to care for the infant.

6.4.11. Recommendations made by professional nurses on infant feeding practices

The professional nurses narrated their responses which were consolidated into expectations and recommendations concerning HIV-positive mothers’ infant feeding decisions, as reflected in the following discussion:

6.4.11.1. Ability to make infant feeding decisions

The narrated views of professional nurses were double-barreled in that they said mothers have information or knowledge but are unable to make independent decisions.

They asserted that enough information on infant feeding is offered during antenatal clinic visits, but the mothers cannot utilise acquired knowledge to make decisions.

Other important points are that mothers should disclose their HIV status to the family, have self-confidence, and positive attitude. These will enable HIV-positive mothers to make independent decisions. The information on mothers’ knowledge presented in response to this question included the following:

➢ HIV-positive mothers are given information on how to feed their infants. Although they are given information on how to feed their infants, some mothers lack appropriate information.
According to one of the participants for narratives stated that 90 per cent of mothers have knowledge and do make infant feeding decisions. All pregnant HIV positive women, HIV-negative women, or women with unknown HIV status should receive at least 4 antenatal counselling sessions on infant feeding (National department of health, 2015:87).

The expectations that the professional nurses had rearging HIV-positive mothers’knowledge included the following:

- To make sound, informed, and independent decisions.
- Comply with guidance on infant feeding practices, using chosen methods of feeding, and avoiding mixed feeding.
- Attend clinics as guided.
- Opt for breastfeeding.
- Get partner to be tested.
- Healthy positive living with lifestyle modifications.
- Counselling must be done properly.

These expectations are achievable if proper counselling is done, which is one of the stated expectation as well, even though there was no mention of who is expected to do proper counselling.

Based on the indicated expectations the professional nurses mainly recommended that mothers should:

- be given information to make informed decisions.
- join support groups.
- engage in ongoing counselling.
- practice safe reproductive health practices to eliminate HIV transmission.

These recommendations form the basis for the development of guidelines on infant feeding which are lacking, hence, there is no clear definition of what information was given. It sounds quite ironic that the views of professional nurses state that the HIV-positive mothers have enough information yet one of their recommendations is that they should be given enough information. Based on the diversity of views on infant feeding practices, there is a dire need for uniform infant feeding information to be available and accessible to all HIV-positive mothers at each child health service. Clear guidelines on what should be
taught when and how are crucial for positive outcomes on infant feeding capacity, building, and empowerment.

6.4.11.2. Recommendations on culture and infant feeding
According to the views of professional nurses, culture had an influence on decision-making concerning infant feeding practices. Such views ranged from minimal cultural influences, to a major cultural role. The professional nurses narrated that some HIV-positive mothers develop an inferiority complex and become submissive to the command of some family mothers, such as the in-laws, because of fear of rejection.

What is known as common practice by the majority of mothers, such as breastfeeding and infant feeding methods, is regarded by some people as culture. Practices, such as avoiding breastfeeding when the mother is HIV-positive, are myths for some mothers. This results from the belief that breastfeeding transmits HIV irrespective of preventive measures in use. Based on this, the mothers opt for formula feeding irrespective of their affordability, feasibility, accessibility, safety, and sustainability (AFASS) status. The decisions made under such conditions are not independent and are not culturally motivated.

Community health workers believe that the mothers are influenced by their spouses and family, especially in-laws, not culture, to make a choice of a safe infant feeding method. The other category of mothers believes in the use of ancestral and traditional medicinal preparations, including herbs in the name of cultural practice. It is important that all healthcare providers caring for mothers, infants, and young children should fully adhere with all the provisions of the South African Regulations Relating to Foodstuffs for Infants and Young Children (National department of health, 2015:88).

The community nurses narrated the following expectations regarding the influence of culture:

> Mothers should be aware of their culture and its influence when making decisions
Mothers should stand and fight for their right to make their own decisions
They should understand their own culture and practice it
They should use information gained from health workers regarding the spread of HIV
Mothers should disclose and accept their conditions, be exposed to ongoing counselling, and comply with follow-up instructions

The narratives on recommendations were as follows:
Family members, including grandmothers, should be involved in the care of the infants and when mothers visit health facilities for empowerment
Mothers should practice exclusive breastfeeding for the first six months of life and comply with prophylactic treatment against HIV infection for their infants
Counselling of the entire family, and the mothers-in-law in particular, to support mothers’ decisions
An introduction of community dialogues to make community members aware of infant feeding practices that a mother should continue with. This approach contributes to the strengthening of the health sector’s capacity to deliver high-quality integrated child health and wellness services (National department of health, 2015:3).

6.4.11.3. Recommendations on HIV-positive Mothers’ feelings on infant feeding decisions

Views of the professional nurses regarding the mothers’ feelings following decision-making were as follows:

- Mothers have minimal independence and they are not listened to due to them being females
- Unemployed mothers feel obliged to opt for breastfeeding because they cannot afford milk formula
- Working mothers also feel obliged to use formula feeding, probably because they are not able to stay with their infants for breastfeeding
- Some mothers often feel satisfied with their decisions, which sometimes satisfy their needs even if they don’t suit the infants’ needs
• Some mothers feel as if they’ve made wrong decisions if others, especially the mothers-in-law, are not involved.

Any environment that is not flexible because of gender related issues, such as oppression, fear, and rejection, limits the mother’s freedom to make decisions (Stepanuk et al, 2013:2472).

Professional nurses narrated the following expectations:

- An ability to freely make informed decisions on the choice of feeding method;
- To be able to choose the method based on the baby’s health needs, not the mother’s own comfort;
- The acquisition of knowledge, such as the benefits of breastfeeding;
- The teaching of families, particularly mothers-in-law, to allow them to make independent decisions based on shared information;
- The establishment of support groups to motivate one another through sharing views on the best practices;
- Using their right to knowledge by asking questions;
- As health care workers they believed that they should have good listening skills, coping mechanism, stop being judgmental, demonstrate competence, be loving, knowledgeable, and assertive (Ndubuka et al, 2013:4).

Based on the stated expectations the following recommendations were narrated:

- There should be a formation of support groups for mothers to encourage one another and talk about their feelings regarding making decisions.
- The support group must be trained so that they can provide relevant and appropriate support on infant feeding practices.
- The mothers should receive ongoing health education, counselling, and support to allow her to make the right, informed decision.
- The spouses should support their partner’s decisions and protect them from in-law’s influence.
- Working mothers should be given six months maternity leave so that they can make suitable infant feeding decisions without the pressure of returning to work early.
Health workers should continue promoting breastfeeding to HIV positive mothers for the benefit to both the mother and the baby (WHO, 2016:1).

6.4.11.4. Recommendations on environment where the decisions are made

Views of community healthcare workers regarding the environment where decisions were made included the following:

- Mothers may be afraid of the in-laws regarding their choices.
- The environment plays a major role as certain factors may influence the mother’s decisions, such as being asked too many questions about her choice of infant feeding.
- The mother may be expected to mix-feed as the norm in her environment and this will interfere with her decision of exclusive milk feeding for the first six months of life.
- Mothers take the views of the community members more seriously than what the views of health workers yet such views are not always positive.

The narratives of professional nurses reflected the following expectations and recommendations regarding the environment where infant feeding decisions are made:

- If a mother decides to formula feed, the environment, including the in-laws, should support her decision.
- Mothers should use the information gained to make decisions and to feed their infants without allowing the environment or other community members to influence them.
- Mothers should always strive to do the right thing even if it means differing from other people in the community, as long as it is the right thing that will benefit them and their infant.
- Breastfeeding support groups should be formed to promote breastfeeding.

6.4.11.5. Recommendations regarding the level of skill to make free infant feeding decisions
The views of community health workers regarding the level of skill possessed by the mother to make free choices included the following:

- They have adequate knowledge to buy necessities for the infant.
- They have skills because they are empowered early during antenatal care classes as well as learning relevant skills through health education and counselling to make informed decisions.

Regarding skills to make free choice, professional nurses narrated the following expectations:

- Mothers should be introduced to skills developing programs during sessions such as antenatal classes in order to empower themselves.
- Mothers should have the adequate knowledge and skill to make decisions and should weigh all available options without being influenced by other people.
- Mothers must be the one who take charge of themselves and participate in ongoing education to acquire more knowledge and skills.

The following recommendations were made regarding the knowledge and skills to make free infant feeding decisions:

- Efforts should be made to let the mother’s visit to the child health service sites worthwhile for quality and competence rather than mere compliance.
- A focus on empowerment of HIV positive mothers and their significant others, with regard to appropriate infant feeding practices, thus enabling them to make emancipative infant feeding decisions (Stepanuk et al, 2013:2472).
- The mothers should use information gained to make choices that would benefit them and their infants without using money.

6.5. LIMITATIONS OF THE STUDY

This study was conducted on a small portion of the population of Mpumalanga province and the data collected was therefore contextual and sufficient although
the findings may not be generalised. However, the findings provide a significant picture regarding the challenges encountered in the area of infant feeding in the context of HIV-positive mothers.

In view of the common language used by the inhabitants of Mpumalanga Province, the researcher was advantaged by the fact that she is familiar with the Siswati language which helped her understand beyond the expressed words. Some of the cultural activities might not make sense to others, thus, limiting the applicability of the findings based on cultural background.

In some instances recruited people would promise to be available up to the time set for starting the focus group interview sessions, after which some of them turned off their phones and were unavailable. It therefore became imperative in such instances that the participants who availed themselves, were interviewed, irrespective of the number, and they each yielded invaluable data for the study.

Polit and Beck (2012:250) state that data sources might be good but the sample profile often limits the transferability of the study. There are future opportunities and needs to expand the horizon of this research for more intensive study and understanding of the study content. Future studies might widen the horizon on the extent of the challenges identified in this study.

**6.6. CONTRIBUTIONS OF THE STUDY**

The HIV/AIDS pandemic and high prevalence in Mpumalanga Province warrant a high index of sensitivity to eliminate mother-to-child transmission of HIV infection. The findings of this study benefit the Mpumalanga Province in general and the Ehlanzeni District in particular. The perceived inadequate information given to the mothers who are HIV positive was confirmed by the study.

The response of the participants to the support given indicates that, not only are the mothers in need, but also health workers themselves need to be capacitated. The recommendations on the empowerment of both health workers and mothers alike potentially reduce the poor capacity issue.
Consolidation of information should be shared with the HIV-positive mothers and their significant others. The guidelines provided the opportunity for new recommendations to be aligned with any existing ones, thus promoting consistency in client teaching and counselling (National Department of Health, 2015:2). The following specific contributions are expected to be made by the findings of this study in the area delineated below:

**Practice**

- Increasing the body of knowledge regarding what constitutes appropriate infant feeding practices which eliminate vertical HIV transmission through breastmilk feeding for the benefit of HIV-positive mothers and their significant others.
- The guidelines strengthen the integration of infant feeding information into every child healthcare service for HIV-positive mothers and their significant others. This improves access to guidelines for healthcare providers within different groups of clients generally, but mothers and their infants in particular (National department of health, 2015:2).
- The empowerment of professional nurses and infant feeding counsellors to share substantial information specific to infant feeding practices.
- Possible governmental policy changes based on the effectiveness of these guidelines.
- New standards may need development regarding information given to the mother on infant feeding for every visit to a clinic.
- The development of monitoring and evaluation of child healthcare services with regard to the implementation of guidelines.
- The possible decline in infant mortality rate caused by mixed feeding.
- Reprioritising of health indicators for better outcomes on child healthcare units.

**Nursing Education**

- A new body of knowledge has emerged in the guidelines that specifically addresses HIV positive mothers in the context of infant feeding.
• Nursing and Midwifery Curriculum changes, particularly in the modules and learning guides for mother and child care in the context of HIV infection, infant and young child feeding, and the prevention of mother-to-child-transmission of HIV.

• Clinical teaching and learning guides and strategies might need to be changed to accommodate new embedded knowledge on infant feeding by HIV-positive mothers, and to develop relevant assessment criteria for acquired knowledge.

• Clinical assessment instruments and strategy changes to accommodate new dispensation in the outcomes.

• The new body of knowledge forms the basis for health education on infant feeding for nursing and midwifery students at different levels of training.

• Nursing students need information to communicate to clients and patients on infant feeding in the context of HIV infection. The guidelines provide that information for nursing students to communicate to HIV-positive women and mothers. Heydon (2013:1) attests to the latter statement by stating that a person acquires personal knowledge through observation and first-hand information.

Research

• Providing a fertile ground for similar research on a broader scale to produce generalisable findings as the findings are very important to shape the paradigm of infant feeding within, and even outside Mpumalanga.

• The education field will be enriched by the guidelines, which will form part of student curriculum, particularly the specific information on infant feeding practices.

• Community health centre and client relationships are likely to shift from a negative to a positive attitude once the client’s needs are met in accordance with study findings.

• The guidelines also enable more timely, consistent, and simultaneous updates on new science and emerging practices applicable to mother and child in the context of HIV and infant feeding (National department of health, 2015, p.2).
6.7. CONCLUSION

This chapter dealt with the discussion of the summary, limitations, and recommendations for the study as well as the final report on this research study. The objectives and purpose of the study were reviewed to check if they were achieved or not. The summary reflected the highlights of the findings for each research question, which was aligned with each study objective, thus confirming achievement of each objective. The contributions made by the study were also discussed in terms of future plans and improvements in infant feeding health outcomes. It is essential to incorporate the National and International infant feeding guidelines when implementing the developed guidelines to ensure proper alignment.

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ANNEXURE A

Research interview protocol -English version
ANNEXURE A: Research Interview Protocol

1. Questions for the HIVR-positive mothers

Central Question:

1.1. What are your experiences, as a mother, with regard to decision-making on your choice of infant feeding methods at home; at the Health Facilities, in the community where you live and with regard to your skills of decision-making?

Probing Questions

1.1.1. What cultural practices and beliefs play a role in decision-making on your choice of infant feeding practices? (Social norms)

1.1.2. (a) How do your friends think or feel or react about the infant feeding choices that you've made?
(b) How does your family think or feel or react about the infant feeding choices that you've made?
(c) How does your Community think or feel or react about the infant feeding choices that you've made? (Personal knowledge)

1.1.3. What is it like for you to decide independently on the choice of infant feeding method? (Level of empowerment or skills)

1.1.4. How easy is it for you to change the chosen method in your community? (Flexible environment).

1.1.5. How does it make you feel when you finish making your choice of infant feeding independently? (Reflection)

1.1.6. What kind of support or assistance or guidance do you expect to get regarding infant feeding practices from your
(a) Family
(b) Community
(c) Staff of health facility (clinic or hospital)

1.1.7. What kind of support or assistance/guidance are you getting presently regarding infant feeding practices from:

a) Family?

b) Community?

c) Staff of health facility (clinic or hospital)?
2. Questions for the Significant others

Central question

2.1. What are your experiences regarding the choice of feeding practices decided upon by your (-)(spouse/daughter/daughter-in-law/sister, etc.)?

Probing questions

2.1.1. In your view what informed her to decide on the chosen method? -
2.1.2. What kind of help do you often give to your(....) with regard to infant feeding practices?
2.1.3. What kind of contribution does the entire family make for the mother and
2.1.4. What would you regard as the best support that she needs?
2.1.5. What are your expectations for this mother with regard to infant feeding practices?
ANNEXURE A-1

Research interview protocol - Vernacular version
1. QUESTIONS FOR HIV-POSITIVE MOTHERS

<table>
<thead>
<tr>
<th>English Version</th>
<th>SiSwati Version</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1.</strong> What are your experiences, as a mother, with regard to decision-making on your choice of infant feeding methods at home, at the Health Facilities, in the community where you live and with regard to your skills of decision-making?</td>
<td><strong>1.</strong> Ake usho, kwenteka njanikutsiutitfole sewukhetse kudlisa lomntfwanakho libele (noma libhodlela)?</td>
</tr>
</tbody>
</table>

**1.1.** What cultural practices and beliefs play a role in decision-making on your choice of infant feeding practices? (Social norms)

**1.1.2.** (a) How do your friends think or feel or react about the infant feeding choices that you've made?

(b) How does your family think or feel or react about the infant feeding choices that you've made?

(c) How does your Community think or feel or react about the infant feeding choices that you've made? (Personal knowledge)

| 1.1.2. (a) Ingabe batsinibangane ngalesincumo sakho salokhukudla lokupha umntfwanakho | 1.1.2. (a) Ingabe batsinibangane ngalesincumo sakho salokhukudla lokupha umntfwanakho |
| (b) Ingabe titsinitihlobo ngalesincumo sakho salokhukudla lokupha umntfwanakho | (b) Ingabe titsinitihlobo ngalesincumo sakho salokhukudla lokupha umntfwanakho |
| (c) Ingabe utsiniumphakatsingalesincumc sakho salokhukudla lokupha umntfwanakho | (c) Ingabe utsiniumphakatsingalesincumc sakho salokhukudla lokupha umntfwanakho |
### English Version

<table>
<thead>
<tr>
<th>Question</th>
<th>SiSwati Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3. What is it like for you to decide independently on the choice of infant feeding method? (level of empowerment or skills)</td>
<td>1.1.3. Nawubuka, utiva ukhululekile kwenta lesisincumo sokudlisa lomntfwanakho lokhukudla?</td>
</tr>
<tr>
<td>1.4. How easy is it for you to change the chosen method in your community? (flexible environment)</td>
<td>1.1.4. Nangabe ufuna kuntshintsha lokhukudla komntfwanakho kungaba malula ngakanani kuwe?</td>
</tr>
<tr>
<td>1.5. How does it make you feel when you finish making your choice of infant feeding independently? (reflection)</td>
<td>1.1.5. Ake usho, nangabe ucedza kwenta letincumo ngendlela adla ngayo lomntfwanakho, utiva kanjani?</td>
</tr>
<tr>
<td>1.6. What kind of support or assistance or guidance do you expect to get regarding infant feeding practices?</td>
<td>1.1.6. Ungatsandza kutfola lusito lolunjani (a) kubomndeni, (b) bomphakatsi (c) nabase-benti bomtfolampilo macondzana nekudlisa lomntfwanakho?</td>
</tr>
<tr>
<td>1.7. What kind of support/assistance/guidance are you getting presently regarding infant feeding practices from:</td>
<td>1.1.7. Lusito luni lolutfola macondzana nekudlisa lomntfwanakho?</td>
</tr>
<tr>
<td>(a) Family</td>
<td>(a) kubomndeni, (b) bomphakatsi</td>
</tr>
<tr>
<td>(b) Community</td>
<td></td>
</tr>
<tr>
<td>(c) Staff of health facility (clinic or hospital)</td>
<td>(b) bomphakatsi</td>
</tr>
<tr>
<td>(c) Nabase-mtfolampilo</td>
<td></td>
</tr>
</tbody>
</table>
2. QUESTIONS FOR THE SIGNIFICANT OTHERS

<table>
<thead>
<tr>
<th>English version</th>
<th>SiSwati Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are your experiences regarding the choice of feeding practices decided upon by your(-) spouse/daughter/daughter-in-law/sister,etc.?</td>
<td>2. Ake usho,kuyiniJokwentako macondzana nalokhukudla kwalomntfwana wa(-) wakho</td>
</tr>
<tr>
<td>1... In your view what informed her to decide on theosen method? -</td>
<td>2.1. Ngekubona kwakho lusito Junialutfolile ut(-)kute akhone kunika lomntfwana kudla lukudlako?</td>
</tr>
<tr>
<td>2. What kind of help do you often give to your (...) with regard to infant feeding practices?</td>
<td>2.2. Lusito luni (-) alutfola kuwe macondzana nalokhu akudlisa lomntfwanakhE</td>
</tr>
<tr>
<td>3. What kind of contribution does the entire family make for the mother and her baby with regard to infant feeding practices?</td>
<td>2.3. Lusito luni u (-) alutfola kubomndeni macondzana nalokhu akudlisa lomntfwanakhE</td>
</tr>
<tr>
<td>4. What would you regard as the best support that she needs?</td>
<td>2.4. Nawubuka,lusito luniloludzingeka kakhu macondzana nokudlisa lomntfwanakhe</td>
</tr>
<tr>
<td>5. What are your expectations for this mother with regard to infant feeding practices?</td>
<td>2.5. Bewungatsandza kutsiadliswe kanjani lomntfwana</td>
</tr>
</tbody>
</table>
ANNEXURE B Narrative for professional nurses
Narrative for professional nurses

Kindly read the instruction given below and write your response on the script provided to you.

Please write responses on the other demographic information as requested. NB. DO NOT write your names, to observe confidentiality.

Date of employment at this HF: ---

Date & Time of interview:-------- Place of interview:-------------------

Name of the Health Facility:--------

Kindly write a narrative about your experiences on the HIV-positive mothers' decision-making on their choice of infant feeding practices:

Using the guide table given below, describe your views, expectations and recommendations on the items given in the first column given below. NB. Answer on the given paper OR draw the table in the script provided to you, to make it bigger if necessary.
2. Questions for Community health workers

Central question:

What are your experiences concerning the decisions made by HIV-positive mothers with regard to the choice on infant feeding practices?

Probing questions:

- What would make you to say that the HIV-positive mothers make free informed decisions on their choice of infant feeding methods?

- How would you explain your role in the decisions that the HIV-positive mothers make about their choice of infant feeding practices?

Questions for Community health workers (contd)

Probing questions (contd)

- What are your expectations for this mother to keep to her chosen infant feeding methods?

- What support, in your opinion, should be given for the HIV-positive mothers to make free independent decisions about infant feeding practices?
<table>
<thead>
<tr>
<th>ITEMS TO WRITE ABOUT</th>
<th>VIEWS</th>
<th>EXPECTATION</th>
<th>RECOMMENDATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV-positive mother’s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>amount of knowledge to make decisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influence of culture and her ability to make decisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s feeling about decisions she makes</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Influence of environment where decision is made</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of skills that the mother has to make free choices</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANNEXURE C

Letter to HOD: Health/Ehlanzeni District Manager
TO: EHLANZENIDISTRICT MANAGER

MPUMALANGA DEPARTMENT OF HEALTH:

Dear Sir/Madam

PERMISSION TO CONDUCT A RESEARCH STUDY: THE DEVELOPMENT OF GUIDELINES TO SUPPORT INFANT FEEDING PRACTICES OF HIV-POSITIVE MOTHERS IN THE MBOMBELA MUNICIPALITY OF MPUMALANGA PROVINCE

Your permission is hereby requested to conduct a research study in the Ehlanzeni District of Mpumalanga Province PHC health facilities, within the Mbombela Municipality. The study is aimed at assessing and analyzing the experiences and challenges that are encountered by the HIV positive mothers from the rural communities of this Municipality of Mpumalanga Province regarding the choice of infant feeding practices.

The main objective of the study is to explore the knowledge and experiences of the HIV-Positive mothers concerning available options for infant feeding practices, to determine their ability to make emancipated decisions on available options, and to finally develop guidelines to empower and support them to make emancipated informed decision.

The purpose of the study is to develop guidelines that could be used to support the choice of infant feeding practices of HIV positive mothers in the Mbombela Municipality of Mpumalanga Province. Find enclosed herewith my research proposal.

Yours Sincerely

Mrs ET Ma iY f (Researcher)
ANNEXURE D

Informed consent for study participants
ANNEXURE 0:

INFORMED CONSENT FOR THE RESEARCH PARTICIPANTS -VERNACULAR
IMVUME YOKUHLANGANYELA KULE:RESEARCH STUDY:THE
DEVELOPMENT OF GUIDELINES TO SUPPORT INFANT FEEDING PRACTICES
OF HIV-POSITIVE MOTHERS IN THE MBOMBELA MUNICIPALITY OF
MPUMALANGA PROVINCE

Lwatingale-research study ngilutfolile, ngacabanga kahle ngalo sikhatsilesanele,
futsingiyakwaticonkhe lokuphatsele neale-study. Ngivumile ngekutsandza kwami
kuhlanganyela kule-study.

Bangiljelile kutsinome ninginingakhetsa kubahuma kubete tizathu lengitetfulako. Angeke
kuhuma kwamikule-research study kulimate budelelwane baminabasebenti
basetifolampililo.

Nginolwati lokutsile research study itfole imvume kubaphatsibekomidi ye-Research
yase Nyuvesiye-Sefako Makgatho. Ngivile nokutsi kute lotokwati libito lami nokutsi
miphumela yale-research study itosentshentiswa kwandzisa lwatikumphakatsi
wonkhe, nokutsiingase iphume kumaphepha esive.

Mine ngiyavuma kuhlanganyela kule research study.

Libito: ________________________________

Kusayina: ____________________________Lusuku.__________________________
ANNEXUREE

Request letter and consent form for significant others
ANNEXURE E: CONSENT FORM FOR SIGNIFICANT OTHERS

SIBOPHELELO SESIVUMELWANO SOKUGCINA TIMFIHLO KULE-RESEARCH STUDY: THE DEVELOPMENT OF GUIDELINES TO SUPPORT INFANT FEEDING PRACTICES OF HIV-POSITIVE MOTHERS IN THE MBOMBELA MUNICIPALITY OF MPUMALANGA PROVINCE

Mine____________________________________________________(libito)
njengelilunga (mndeni, sihlobo, mngane)

Ngiyetsembisa kokutsi ngitawulondza kahle lenke lwatilutfola kule-research study lube yimfihlo lengingete ngayitjela muntfu longakafaneli kwati.

Losayinako___________________________(Libi to) — — — — — —
(lusuku) — — — — — — — — — — — — — — — — — (indzawo)

Kusayina.____________________________________

Longufakatı ________________________________
ANNEXURE E:

SICELO SEMVUME YOKUHLANGANYELA KULE-RESEARCH STUDY
(SIGNIFICANT OTHERS)

Mnumzane/Ozadze

SICELO SEMVUME YOKUHLANGANYELA KULE-RESEARCH STUDY: THE
DEVELOPMENT OF GUIDELINES TO SUPPORT INFANT FEEDING PRACTICES OF
HIV-POSITIVE MOTHERS IN THE MBOMBELA MUNICIPALITY OF MPUMALANGA
PROVINCE

Lena ncwadzi ihamba kanye naletitokucela imvume yokutsiwena uhlanganyele
kule-research study. Nangabe kkhona mibuto ungasaylbuta usebentise tinombolo
letingetulu.

Lotitfhobako

________________________

Mrs ET Maziya

________________________

Date
ANNEXURE F

Primary health care facilities in Ehlanzeni District
<table>
<thead>
<tr>
<th>CLINIC NAME</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. KaNyamazane CHC</td>
<td></td>
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<tr>
<td>2. Matsulu CHC</td>
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</tr>
<tr>
<td>3. Msogwaba 8hr</td>
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<tr>
<td>4. Eziweni(Pienaar) Bhr</td>
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<tr>
<td>5. Nkwalini(Matsulu C) Shr</td>
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<tr>
<td>6. Sibuyile (Pienaar) Bhr</td>
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<tr>
<td>7. Luphisibi Bhr</td>
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<tr>
<td>8. Thekwane Shr</td>
<td></td>
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<tr>
<td>9. Mpakeni Shr</td>
<td></td>
</tr>
<tr>
<td>10. Zwekisha Bhr</td>
<td></td>
</tr>
<tr>
<td>11. Nelsville clinic</td>
<td></td>
</tr>
<tr>
<td>12. Valencia clinic</td>
<td></td>
</tr>
<tr>
<td>13. Nelsville civic centre</td>
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</tr>
<tr>
<td>MBOMBELA NORTH</td>
<td></td>
</tr>
<tr>
<td>14. KaBokweni CHC</td>
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</tr>
<tr>
<td>15. Bhuga CHC</td>
<td></td>
</tr>
<tr>
<td>16. Phola Nsikazi CHC</td>
<td></td>
</tr>
<tr>
<td>17. Qau-Cia Shr</td>
<td></td>
</tr>
<tr>
<td>18. Dwali Shr</td>
<td></td>
</tr>
<tr>
<td>19. Mbonisweni 8Hr</td>
<td></td>
</tr>
<tr>
<td>MBOMBELA NORTH</td>
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<td>----------------</td>
<td></td>
</tr>
<tr>
<td>20. Gutshwa Shr</td>
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</tr>
<tr>
<td>21. Khumbula 8hr</td>
<td></td>
</tr>
<tr>
<td>22. Makoko Shr</td>
<td></td>
</tr>
<tr>
<td>23. Legogote 8hr</td>
<td></td>
</tr>
<tr>
<td>24. Jerusalem Shr</td>
<td></td>
</tr>
<tr>
<td>25. Manzini 8hr</td>
<td></td>
</tr>
<tr>
<td>26. Mthimba 8hr</td>
<td></td>
</tr>
<tr>
<td>27. Sand River 8hr</td>
<td></td>
</tr>
<tr>
<td>28. Shabalala 8hr</td>
<td></td>
</tr>
<tr>
<td>29. Hazyview Shr</td>
<td></td>
</tr>
<tr>
<td>30. Skukuza Shr</td>
<td></td>
</tr>
<tr>
<td>31. Mjejane CHC</td>
<td></td>
</tr>
<tr>
<td>32. White River Municipal 8hr</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: List of primary health care (PHC) facilities in Ehlanzeni Health District
ANNEXURE G

Comments of experts on evaluation of guidelines
ANNEXURE G: The comments of all the experts were incorporated in the study and are summarized below (balded responses are their recommendations):

<table>
<thead>
<tr>
<th>How clear are guidelines?</th>
<th>Clear, concepts well defined.</th>
<th>All concepts were added as advised, however since PMTCT is an acronym it was applied rather than defined. (Refer to chapter 5 box 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How simple are the guidelines?</td>
<td>Structure is simple and in line with the World Health Organization (WHO), National Institute for Health. Align these with National Consolidated guidelines for PMTCT and Management of HIV in Children and Tshwane declaration of 2011.</td>
<td>Aligned accordingly.</td>
</tr>
<tr>
<td>How general are the guidelines?</td>
<td>Guidelines can be used even for HIV-negative mothers for prevention of mother-to-child transmission of HIV infection.</td>
<td>Appreciated the comments.</td>
</tr>
<tr>
<td>How accessible are the guidelines?</td>
<td>Definitions are clear, explicit and understood and specific to the topic, relevant. Well applicable to practice based on conceptual perspective.</td>
<td>Appreciated the comments.</td>
</tr>
<tr>
<td>How important are the guidelines?</td>
<td>Has profound clinical significance since mixed feeding causes malnutrition and infant mortality; mothers lack knowledge of infant and young child feeding. All health facilities should have these guidelines on infant feeding; All pregnant women need to be empowered on PMTCT issues to influence their decisions on infant feeding options. Health workers need to be updated with information on PMTCT and infant and young child feeding.</td>
<td>Appreciate comments and acknowledge recommendation.</td>
</tr>
</tbody>
</table>
ANNEXURE H

Approval letter from Sefako Makgatho Health Sciences University (SMU) Medical Research and Ethical Council (MREC)
MEDUNSA RESEARCH & ETHICS COMMITTEE

CLEARANCE CERTIFICATE

MEETING: 08/2013
PROJECT NUMBER: MREC/H/267/2013: PG

PROJECT:
Title: The development of guidelines to support infant feeding practices of HIV positive mothers in the Mbombela Municipality of Mpumalanga Province

Researcher: Ms ETMaziya
Supervisor: Dr MLM Sengane
Other Involved HOD: EJ van Aswegen
Department: Nursing Sciences
School: Health Care Sciences
Degree: PhD Nursing Sciences

DECISION OF THE COMMITTEE:
MREC approved the project.

03 October 2013

PROF N EBRAHIM
DEPUTY CHAIRPERSON MREC

UNIVERSITY OF LIMPOPO
Medunsa Campus
2013 io-30
1/EDVNSA RESEARCH ETHICS COMITTEE
MREC CHAIRPERSON

Note:
i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
ii) The budget for the research will be considered separately from the protocol.

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.
ANNEXURE I

Approval letter from Provincial Ethics Committee
Enquiries: Themba Mulungo  (013) 766 3511

Ms. Evidence Mazlya Mpumalanga
College Of Nursing Private Bag
X1005
KABOKWENI
1245

Dear Ms. Evidence Mazlya

APPLICATION FOR RESEARCH & ETHICS APPROVAL: THE DEVELOPMENT OF GUIDELINES TO SUPPORT INFANT FEEDING PRACTICES OF HIV POSITIVE MOTHERS IN THE MBOMBELA MUNICIPALITY OF MPUMALANGA PROVINCE

The Provincial Research and Ethics Committee has approved your research proposal in the latest format that you sent

Kindly ensure that you provide us with the soft and hard copies of the report once your research project has been completed.

Kind regards

24 February 2014
ANNEXURE J

Road To Health booklet portion
Take your child to the nearest clinic when any of the these danger signs occur:

- Vomiting everything
- Unable to breastfeed
- Convulsions
- Child lethargic or unconscious
- Cough and breathing rate more than 50 breaths per minute
- Diarrhoea with sunken eyes or sunken fontanelle
- Diarrhoea with blood
- Child under 2 months and:
  - Is not feeding
  - Diarrhoea with blood
**NEONATAL INFORMATION**

Birth weight:  
Birth length:  
Head circumference at birth:  
Gestational age (weeks):  
Rh factor:  
Mother’s RPR:  
Antenatal (Maternal history):  
Intrapartum (including mode of delivery):  

APGAR: 11 min 15 min  
Neonatal problems: (identify high risk problems):  

Neonatal Feeding:  
D Exclusive breast  
O Exclusive formula  
Special care plan (input required e.g. Kangaroo Mother Care)  
Specify:  

Post-discharge plan (if baby was admitted in a neonatal ward/premature):  

**PMTCT/HIV INFORMATION**

Child’s first name and surname:  
Child’s 10 Number:  
Signature of consent:  

Fill in this section on discharge from Midwife Obstetric Unit (MOU) or obstetric ward or at first subsequent visit if not yet done:  

Mother’s latest HIV test result:  
Positive  
Negative  
To be done  

When did mother have the test?  
Before pregnancy  
During pregnancy  
At delivery  

Is the mother on life-long ART?  

If yes, duration of life-long ART:  
O < 1 weeks  
O > 1 weeks  
Before pregnancy  

Document ARVs the mother received:  

Utd the mother receive maternal feeding counseling?  
Yes  
No  

Decision about infant feeding:  
O Exclusive breast  
O Exclusive formula  

All HIV exposed infants should receive Nevirapine for a minimum of 6 weeks:  

Has the mother disclosed to anyone in the household?  
Yes  

Has the mother’s partner been tested?  

Remember to offer testing for all the mother’s other children if not yet
Offer a mother with unknown HIV status a rapid HIV test.

If mother's HIV rapid test is positive, perform an HIV DNA PCR test on infant if 6/52.
ANNEXURE K

Permission from District Manager to conduct study
Dear Mrs Maziya

PERMISSION TO CONDUCT A RESEARCH STUDY: THE DEVELOPMENT OF GUIDELINES TO SUPPORT INFANT FEEDING PRACTICES OF HIV POSITIVE MOTHERS IN THE MBOMBELA MUNICIPALITY OF MPUMALANGA PROVINCE

Your letter dated 26 February 2014 refers,

Permission is hereby granted to conduct the above stated research study in PHC facilities in Mbombela sub-district of Ehlanzeni district.

You are requested to list the targeted facilities and the dates of the visits so that your visit can be planned to minimise interruption of service delivery in the facilities.

Kindly ensure that you provide us with the soft and hard copies of the research report. We wish you all the best with your research study and report.

Regards,

M...  
CHIEF DIRECTOR: EHLANZENIDISTRICT

13/03/2014
DATE
ANNEXURE L

Manual to support HIV-positive mothers' infant feeding guidelines
<table>
<thead>
<tr>
<th>PRICE THEORY CONSTRUCTS</th>
<th>EXPECTED OUTCOMES</th>
<th>RELATED ACTIVITIES</th>
<th>SPECIFIC ACTIVITIES TO ATTAIN EXPECTED OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.2.1. Empowerment</td>
<td>Empower the HIV-positive mothers to make informed infant feeding decisions</td>
<td>Improve capacity building strategies;</td>
<td>• Assess the level of infant feeding knowledge and skill possessed by individual HIV-positive mother;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Provide the safe infant feeding options available to HIV-positive women to feed infants of HIV positive mother;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Provide guiding conditions for formula feeding using the AFASS criteria as follows:</td>
</tr>
</tbody>
</table>

Acceptable - in terms of cultural beliefs;
Feasible - availability and accessibility of resources including clean running water and fuel to boil water; Affordable — access to resources to purchase infant feeding formula;
Safe - method of preparation and cleaning of utensils are clearly understood and correctly implemented; Sustainable - working mothers will be able to express breast milk and store it in cool dry places.
Infant milk formula will always be available.

Outline the risks and benefits of different infant feeding.
| Options available for HIV positive mothers. | Explain benefits of exclusive breastfeeding  
| | Explain how to sustain exclusive breastfeeding for the first 6 months.  
| | Explain mixed feeding and its effects on the infant  
| | Outline steps for successful breastfeeding  
| | Demonstrate the skills of putting the baby on the breast.  
| Involve relevant stakeholders who influence infant feeding decisions and practices  
| | Provide appropriate infant feeding information.  
| | Identify infant feeding support groups for HIV-positive mother to participate in acquisition of knowledge, skills and positive attitudes on infant feeding practices.  
| | Advise the HIV-positive mothers to come with their significant others at each visit to a health facility in order to provide safe infant feeding information to the whole community especially males, grandparents and youth to enhance support for HIV-positive mothers.  
| | Especially male partners, grandparents, and the entire community.  
| | Target chronic days to educate the elders about HIV, its transmission, transmission from mother to child and prevention thereof.  
| | Community dialogues to encourage treatment adherence and disclosure.  
<p>| | 2 |</p>
<table>
<thead>
<tr>
<th>WITTMANN-PRICE THEORY</th>
<th>EXPECTED OUTCOMES</th>
<th>RELATED ACTIVITIES</th>
<th>SPECIFIC ACTIVITIES TO ATTAIN EXPECTED OUTCOMES</th>
</tr>
</thead>
</table>

322
Increase personal knowledge of HIV-positive mothers to enhance ability to make informed infant feeding decisions and practices.

Increase access to:

- Conduct one-on-one infant feeding counselling at each visit of the HIV-positive mother to the health facility.
- Spell out risky behaviors that increase the chances of transmission (unprotected sex, poor diet) and encourage safe sex always.
- While as a country we are promoting breastfeeding because of its benefits, which outweigh the risks, teach the HIV-positive mothers about the presence of the HI-virus in the breast milk and the measures to prevent its transmission, which include lifelong ART to mothers (for viral load suppression) as well as infant prophylaxis.
- Emphasize the importance of adherence to treatment.
- Allow the HIV-positive mother to raise her concerns about infant feeding decisions then address them accordingly.
- Provide information that will assist the HIV-positive mother to sustain exclusive feeding for the first six months of life, such as exclusive breastfeeding (expressed breast milk.)
• Demonstrate hygienic practices including hand washing, cleaning and disinfection of infant feeding equipment to prevent infection;

• Provide information that enhances compliance with prescribed antiretroviral therapy for the mother and infant during the course of breastfeeding to promote HIV free child survival;

• Allow more sessions such as on Saturdays or Sundays, in agreement with the HIV-positive mothers, to provide needs-based infant feeding information individually and in groups;
<table>
<thead>
<tr>
<th>Wittmann-Price Theory Constructs</th>
<th>Expected Outcomes</th>
<th>Related Activities</th>
<th>Specific Activities to Attain Expected Outcomes</th>
</tr>
</thead>
</table>
| 5.2.3. Flexible environment     | Create a flexible environment for the HIV-positive mothers to make informed infant feeding decisions | Provide adequate education on the relevant information to encourage infant feeding decisions | • Identify the significant others (male partners, grandparents and the youth, both males and females) and infants care givers for individual HIV-positive mothers to provide counselling on cultural practices that negatively influence exclusive milk feeding  
  • Assist the HIV-positive mothers to identify cultural practices that deter exclusive milk feeding in the home environment  
  • Provide education on cultural practices that negatively influence exclusive milk feeding to empower the mother to manage infant feeding decisions. |
|                                 | Provide an atmosphere that would allow HIV- | • Ongoing in-service education or PMTCT Policy updates to health care workers to keep abreast of the latest developments PMTCT including safe infant feeding |                                           |
| Positive mothers to freely make infant feeding decisions | • Display positive caring attitude during interaction with the HIV-positive mothers:  
• Use the language that allows for free expression during interaction with HIV-positive mothers:  
• Encourage disclosure to the significant others so that they can provide support to the HIV positive mothers with their chosen feeding option.  
• Educate the significant others to demonstrate gestures of love and understanding for the infant feeding decisions of HIV-positive mothers to promote mental health.  
• Provide sessions for community dialogues which promote freedom to comply with infant feeding decisions made by HIV-positive mothers. |
| Increase access to infant feeding support for HIV-positive mothers | • Identify support needs for individual HIV-positive mothers to make infant feeding decisions;  
• Advise the HIV-positive mothers to form their own breastfeeding support groups to promote breastfeeding as the ideal infant feeding method.  
• Assist the employed HIV-positive mothers to employ their rights to access leave benefits to enable them to comply |
with infant feeding decisions.

• Express message of encouragement for every positive achievement that are identified during interaction with HIV-positive mothers.

• Ensure availability of designated areas for expressing and storage of breast milk during working hours to ensure sustainability of the chosen option.
<table>
<thead>
<tr>
<th>PRICE THEORY CONSTRUCTS</th>
<th>EXPECTED OUTCOMES</th>
<th>RELATED ACTIVITIES</th>
<th>SPECIFIC ACTIVITIES TO ATTAIN EXPECTED OUTCOMES</th>
</tr>
</thead>
</table>
5.2.4. Reflection

<table>
<thead>
<tr>
<th>Create an environment for the HIV-positive mothers to reflect on the decisions made on infant feeding.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encourage the HIV-positive mothers to reflect on the informed infant feeding decisions made at each interaction with them;</td>
</tr>
<tr>
<td>Instill positive attitude towards HIV-positive mothers at each interaction with them to enhance compliance and sustainability.</td>
</tr>
<tr>
<td>Allow the HIV-positive mothers to express their feelings about infant feeding decisions made.</td>
</tr>
<tr>
<td>Ensure that the chosen option will not compromise the health of the exposed infants by giving appropriate advice such as adherence to prophylactic treatment for HIV.</td>
</tr>
<tr>
<td>State to the HIV-positive mothers that their decisions are respected and valued for elimination of HIV Mother-to-Child transmission.</td>
</tr>
<tr>
<td>Praise every positive infant feeding action performed by the HIV-positive mother to develop confidence &amp; raise self-esteem.</td>
</tr>
<tr>
<td>Express appreciation for commitment of HIV-positive mothers on infant feeding decisions made.</td>
</tr>
<tr>
<td>Awareness of social norms that influence infant feeding decisions in the environment of the HIV-positive mothers</td>
</tr>
<tr>
<td>Create Encourage the HIV-positive mothers to express social norms</td>
</tr>
<tr>
<td>• Allow the HIV-positive mothers to express social norms that influence infant feeding decisions within their environment;</td>
</tr>
<tr>
<td>• Community engagement and involvement through dialogues to identify issues that negatively influence infant feeding and empower them to deal with such issues.</td>
</tr>
<tr>
<td>• Provide support that will enable the HIV-positive mothers to disclose their HIV status when they are ready and it is safe do so.</td>
</tr>
<tr>
<td>• Demonstrate acceptance of the informed infant feeding decisions made by HIV-positive mothers</td>
</tr>
</tbody>
</table>
ANNEXURE M

Letter as proof of editing done on the thesis
31 December 2017

To Whom It May Concern

EDITING OF PhD THESIS

I hereby confirm that I, Barbara Dupont, edited the thesis written by Evidence Thabisile Maziya, titled "THE DEVELOPMENT OF GUIDELINES TO SUPPORT INFANT FEEDING PRACTICES OF HIV-POSITIVE MOTHERS IN THE MBOMBELA MUNICIPALITY OF MPUMALANGA PROVINCE" and commented on the grammatical anomalies in MS Word Track Changes and review mode by the insertion of comment balloons prior to returning the document to the authors. Corrections were made in respect of grammar, punctuation, spelling, syntax, tense and language usage as well as to sense and flow. Reference guidelines and additional comments were provided to assist with corrections.

I have been teaching English for the past 10 years, and have a Cambridge CELTA diploma in teaching English as a foreign language. I am also employed by the British Council as an official IELTS examiner for South Africa. I have been editing academic and other documents for the past two years, regularly editing the research dissertations, articles and theses of the School of Nursing, Environmental Studies and various other schools and disciplines at the University of KwaZulu-Natal and other institutions, as well as editing for publishing firms and private individuals on a contract basis.

I trust that the document will prove acceptable in terms of editing criteria.

Yours faithfully

Barbara Dupont
ANNEXUREN

SAMPLE OF TRANSCRIPT FROM PARTICIPANTS
ANNEXURE B

Narrative for professional nurses

Kindly read the instruction given below and write your response on the script provided to you.

Please write responses on the other demographic information as requested. NB. DO NOT write your names, to observe confidentiality.

Date of employment at this HF: 

Date & Time of interview: 

Place of interview: 

Name of the Health Facility: 

Kindly write a narrative about your experiences on the HIV-positive mothers' decision-making on their choice of infant feeding practices:

Using the guide given below, describe your views, expectations and recommendations on the items given in the first column given below. NB. Answer on the given paper OR draw the table in the script provided to you, to make it bigger if necessary.

<table>
<thead>
<tr>
<th>ITEMS TO WRITE ABOUT</th>
<th>VIEWS</th>
<th>EXPECTATION</th>
<th>RECOMMENDATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV-positive mother's amount of knowledge to make decisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influence of culture on her ability to make decisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother's feeling about decisions she makes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Influence of environment where decision is made
Level of skills that the mother has to make free choices

I don't believe that the environment has role.

They are given proper health education and counselling hence they make an informed decision.
ANNEXURE B

Narrative for professional nurses

Kindly read the instruction given below and write your response on the script provided to you.

Please write responses on the other demographic information as requested. NB. DO NOT write your names, to observe confidentiality.

Date of employment at this HF: ---

Date & Time of interview: 2:J'l

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<td>HIV-positive mother's amount of knowledge to make decisions</td>
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<tr>
<td>Influence of culture on her ability to make decision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother’s feeling about decisions she makes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influence of environment where decision is made</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of skills that the mother has to make free choices</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- Mothers do not show high levels of stress or make choices that are always influenced by others. They rely on knowledge and experience.

- Expect people to reject all the possibilities she has and make free choices not influenced by others but by knowledge and experience.

- Strive to use information gain to make choices something that would benefit others and mothers without using money that we don't have.
<table>
<thead>
<tr>
<th>Expectations</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>I expect mothers to make informed decisions and make use of information they gained from health workers.</td>
<td>Health workers to try and make mothers see the need for correct decision making without being influenced by myths from their community. To make use of what they learnt from health workers for their own benefit.</td>
</tr>
<tr>
<td>Influence of culture on her ability to make decisions. To a lesser extent culture plays a role in their decision making at times they take common practices to be more of culture despite knowing they are myths but practice them anyway. Eg. some would not eat meat during pregnancy.</td>
<td>- I expect them to make use of information gained from health workers regarding spread of HIV and how it happens. To stick to practices needed for this life style are best for the baby and is promoted. Once these are measured applied for the kids not to be infected. Eg. use of NVP + breastfeeding to prevent HIV infection by HIV for breast milk, exclusive breastfeeding until 6/12 months medication not recommended to be given to babies.</td>
</tr>
</tbody>
</table>