

**THE SOCIO-CULTURAL FACTORS INFLUENCING INFANT FEEDING
PRACTICES AMONG HIV POSITIVE WOMEN ATTENDING POST-NATAL
CLINIC AT KISUMU EAST SUB-COUNTY HOSPITAL, WESTERN KENYA**

BY

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DECLARATION

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This thesis is my original work and has not been presented for a degree in any other University.

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DEDICATION

This thesis is dedicated to all the women who endure the challenges and pressures of life associated with infant feeding and HIV positive status. I also dedicate this work to my beloved children, Marion Pamela and Bradley Obiero, from whom I have experienced the challenges of child care.

ABSTRACT

Prevention of Mother-To-Child Transmission of HIV (PMTCT) intervention is a global health priority, whose aim is to increase child survival and to reduce HIV infections in infants. Reducing post-natal MTCT of HIV especially in Kisumu with high HIV prevalence (17%) through appropriate intervention such as adoption of recommended infant feeding practices is important. Studies show supplementation before 6 months from birth is common, yet non-adherence to safe infant feeding poses a risk to MTCT, hence the need to investigate the infant weaning practice in relation to the recommendations. Despite increased PMTCT awareness aimed at addressing barriers to safe infant feeding practices among HIV infected women, the practices are still sub-optimal and, yet little research has focused on the socio-cultural factors influencing these practices. Also, perception is context specific and translates to practice, thus prompting the study to assess the perception toward feeding guidelines. The specific objectives of the research were to: find out the weaning of infant feeding as practiced among the HIV positive women; examine the socio-cultural factors that influence weaning practices and assess the perception of the women towards PMTCT infant feeding guidelines. Social network theory and theory of planned behaviour/theory of reasoned action were used to explain the relations of the respondents within their social networks, beliefs toward specific infant feeding practices, motivational factors, perception on their ability to perform it and whether their close associates would approve/disapprove the practice in question that played a critical role in influencing the emerging patterns of their infant feeding practices. This was a cross-sectional study. Study population was 270 respondents who were attending the post-natal clinic or were members of post-test support group. 158 respondents were sampled through convenience sampling of which semi-structured questionnaires were administered while purposive sampling was done for 10 in-depth interviews and 3 FGDs where, IDI and FGD guide was administered, respectively. Quantitative data was summarized into frequencies while qualitative data was analyzed using manual content analysis. The findings show, exclusive breast feeding was at 24.8% and, weaning at 4-6 months was common while at below 1 month was rare. Most of the respondents (46.2%) had a monthly family income of below kshs.1000 and only 24% had disclosed their HIV status to their male partners. Respondents' knowledge and perception on the benefits/sufficiency/risk of breast milk and its replacements; the norm of mixed feeding were found to influence weaning of infants. Respondents' social and economic activities and their outcome that revolve around support by the male partner/peers, also determined the weaning practice. The respondents agreed to the regulation of exclusive breast feeding yet in practice, they were sub-optimal. Conclusion is that infant feeding depend mainly on the information respondents receive from their networks' socio-cultural perspectives that in turn influenced their perception and belief in the ability to practise them. The recommendations proposed include a multi-dimensional strategy involving the various networks of the respondents that influence her perception aimed at capacity building them on the recommended infant feeding methods and their implications thereby increasing acceptance at the community and individual level.

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ABBREVIATIONS

FGDs	Focus Group Discussions
HEI	HIV Exposed Infants
IDI	In-depth Interview
MCH	Maternal-Child-Health Clinic is the clinic where both the mother and the infant are cared for and follow-up both at ante-natal and post-natal.
MTCT	Mother-To-Child Transmission of HIV which is the transmission of HIV to the child from an HIV-infected woman during pregnancy, delivery and or breastfeeding.
PCR	Polymerase Chain Reaction
PMTCT	Prevention of Mother-To-Child HIV Transmission.
PMTCT-PLUS	Prevention of Mother-To-Child HIV Transmission and a plus component which refers to a post natal follow-up care given to the exposed children, their mothers and family.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) has become one of the main global health challenges facing humanity today (WHO, 2010). The pandemic has had a devastating impact on families. By 2010, an estimated 38-46 million people worldwide were living with HIV/AIDS (WHO, 2010). Two thirds of them, translating to about 25 million were living in sub-Saharan Africa. According to the World Health Organization (WHO) (2010), it is estimated that 17 million people infected with HIV/AIDS in sub Saharan Africa are women, and 2.1 million are children below 15 years of age. The most rapidly growing population becoming infected with HIV are women. In Africa, women are vulnerable to HIV infections due to existing socio-cultural practices that have also escalated levels of gender inequalities and biological factors such as: the female genital tract which is made up of a larger exposed area, the subordination of African women through economic dependency, lack of assets, lack of protection against abuse and exploitation, differences in social roles and relations between men and women.

The majority of people living with HIV/AIDS are within the reproductive age of 15 to 49 years. According to *Kenya National AIDS Indicator Survey* (KAIS, 2012), an estimated 5.6% of adults in Kenya were infected with HIV by 2012 and almost 6.9% of women, compared to 4.4% of men were HIV infected. The report also indicates that, a higher proportion of Kenyans aged 30-34, were currently infected with HIV than any other age group and that among the youth aged 20-24, women are 3 times more likely to be infected than men (4.6% compared to 1.3 %). A majority of women within the reproductive age are either HIV infected or, for the ones that are not HIV infected are vulnerable to HIV infection. This population if infected is likely to transmit HIV to their infants since it was recognized that HIV-infected mothers have about 5-20% chance of transmitting HIV to their infants through breastfeeding (UNICEF, 2011). Mother-To-Child HIV Transmission (MTCT) accounts for over 90% of childhood HIV infections (National AIDS and STDs

Control Program (NASCOP, 2012). However, the socio-cultural context within which this transmission takes place has not properly been understood.

In 2010, it was estimated that each year, about 15,000 children worldwide, and about 60,000 children in Kenya, are infected with HIV via prolonged breast feeding (WHO, 2010). A Campaign to End Pediatric HIV/AIDS (CEPA) targets to rid the country of pediatric HIV and AIDS by 2013. It cites stigma as a challenge in communities which further aggravated the spread of the virus to children (Okemba, 2010). A 2008 report indicated that the pandemic was undermining child survival rates and if not checked could lead to a doubling of infant mortality rates in some countries by 2110 (NASCOP, 2010). However, not much literature exists on the current infant feeding practices by mothers who are HIV infected yet, non-adherence to the recommended practices determine infant infection rates and child survival rates.

The Millennium Development Goal (MDG) of reducing by two-thirds, the under-five infant mortality between 1990 and 2015 in Kenya, may be hampered by the effects of HIV/AIDS. HIV/AIDS is reversing gains made in reduction of child morbidity and mortality through child survival programs such as Kenya Expanded Program on Immunization (KEPI), breastfeeding and nutrition program. About 30% of all infant deaths can now be attributed to AIDS with the vast majority acquiring the infection through MTCT (NASCOP, 2010). This is happening despite the implementation of Prevention of Mother-To-Child Transmission of HIV (PMTCT) interventions, thus underscoring the need to investigate how infant feeding practices among HIV positive women continue to influence these transmissions despite existing interventions.

PMTCT interventions were identified as an international priority for preventing new HIV infections among infants. The PMTCT programme is integrated within the Maternal Child Health (MCH) clinic with the aim of achieving the ultimate goal of increasing child survival while reducing HIV infection in infants and young children (NASCOP, 2012). The PMTCT intervention package includes firstly, accessing HIV counseling and testing for all antenatal women; secondly, the use of anti-retroviral (ARVs) prophylaxis or treatment

which reduces the maternal viral load thereby lowering the risks of HIV transmission to the infant during delivery; thirdly, optimal obstetric practices to prevent avoidable exposure of the infant to the maternal blood infected with the HIV virus; fourthly, family planning counseling and services that are linked to voluntary counseling and testing of HIV; and the final component of PMTCT involves, counseling and support for safer infant feeding practices (NASCO, 2012).

Exclusive breastfeeding for 4-6 months and then introduction of complementary feeds as breastfeeding continues until 12 months is considered optimal for children born of HIV positive women provided that they and their infants receive ARV drugs during the breast feeding period (WHO, 2010). This is the practice of giving an infant or child no other food or drink, not even water, apart from breast milk with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines (UNICEF, 2011). Alternatively, exclusive breast milk replacement feeding for 4-6 months and then introduction of complementary feeds as replacement feed continues is considered optimal for children born of HIV positive women. This is the practice of feeding an infant or child who is not receiving any breast milk with a diet that provides all the nutrients the child needs (WHO, 2010). This is either a commercial infant formula (prepared from powder and boiling water) or home-modified animal milk (boiled with water and sugar) (NASCO, 2010). However, it is only recommended when it is accessible, feasible, affordable, safe and sustainable (AFASS), otherwise, exclusive breastfeeding is recommended during the first 4-6 months of life (WHO, 2010). When a baby is fed only on breast milk, it is easily digested in the baby's stomach and intestines and does not cause any breaks in the stomach lining. However, after 4-6 months an infant's nutritional needs, and her digestive system can handle a variety of other foods, which is introduced as long as the infant is on ARV prophylaxis while breastfeeding continues (WHO, 2010).

Poor infant and young child feeding practices remain a major public health challenge due to their immediate and long term consequences. Non-adherence to the safe infant feeding guidelines is twice more likely to result in MTCT than either exclusive breastfeeding or breast milk replacement feeding. This is partly because mixed feeding is thought to irritate

an infant's stomach lining. Contaminated fluids and foods may damage the bowels and facilitate the entry of HIV from breast milk through the infants gut. Additionally, mixed feeding may result in inflammation of the breast, which can increase the amount of virus in the milk (UNICEF, 2011). Research has shown that infants exclusively breastfed for 3 months or more had no excess risk of HIV infection over 6 months than those never breastfed and carries a lower risk of HIV infection than mixed feeding (WHO, 2010). This means that mixed feeding has an additional risk of transmission through breast milk than exclusive feeding. However, limited data exist on the current infant weaning practices in relation to the infant feeding regulations that could expose infants to infections.

For most of the HIV infected mothers in developing countries, choosing a suitable infant feeding option represents a dilemma. On one hand, health care providers/PMTCT expects women to abide by WHO recommended infant feeding choices in order to reduce the risk of HIV transmission to infants. On the other hand, women go back home to a society where WHO's recommended infant feeding methods are found to be practically, socially and culturally irrelevant (Njunga, 2008). The missing link is incorporating the social cultural factors and understanding the perception of women on infant feeding guidelines in light of the socio-cultural expectations that play a critical role in influencing infant feeding practices.

PMTCT programmes have greatly expanded HIV/AIDS education, which has led to increased levels of knowledge about MTCT among clients within the communities. The Kenya Demographic Health Survey 2008-2009 indicated that about 87% of women and men know that HIV can be transmitted by breastfeeding. The uptake of PMTCT services among the antenatal women in Kenya varies with sites, with an average uptake of counseling and testing was at 90% and anti-retroviral prophylaxis (ARVs) at 60% in Kenya (KAIS, 2012).

A pattern known as 'cascade' effect is often realized in the implementation of PMTCT intervention. 'Cascade effect' is a sequence of events in which each event produces the circumstances necessary for the initiation of the next. PMTCT service entail: initial contact,

followed by HIV counseling and testing, receiving ARVs prophylaxis or treatment, seeking proper obstetric care, receiving infant feeding counseling to practicing safe infant feeding. The uptake has been noted to decline at each step of the process (Amaoko, 2004). This ‘cascade effect’ leads to low uptake of the services and, specifically, infant feeding practice which is the final step of PMTCT components. Studies have focused less on the perception of women on the safer infant feeding options that are context specific and a key factor in influencing infant feeding practices which is lacking in PMTCT program. Yet, HIV infection among HIV Exposed Infants (HEIs) is mainly as a result of poor infant feeding methods.

1.2 Statement of the Problem

The long-term success of HIV control is dependent on preventing infants and children from getting infected. This is a window of opportunity in respect to HIV prevention. PMTCT is critical and therefore safe infant feeding as one of its components because it is responsible for preventing HIV infection in infants. Studies show infant feeding practices among HIV infected women is still sub-optimal, yet non-adherence to safe infant feeding poses a risk to MTCT. However, efforts to promote the recommended infant feeding methods through increased awareness and intensified counseling have, in most cases, achieved less than the desired outcomes. An in-depth understanding of the current infant weaning practices in relation to the recommended infant feeding options is thus central to the development of comprehensive approaches to PMTCT interventions.

Significant barriers to safe infant feeding practices that have been identified are negligence by the women to practise safe infant feeding, lack of disclosure of the women’s HIV status to the partner or other family members, reluctance of partners to be tested, to discuss and, to practice safe sex and fear of discrimination, stigmatization or rejection, and physical abuse by family, health care workers and community members. Despite increased PMTCT awareness aimed at addressing the barriers, infant feeding practices among HIV infected women is still sub-optimal and, little attention has focused on the social and cultural factors influencing the infant feeding practices. In addition, there is little information about

perception of the women on the recommended infant feeding practices that conflict with their socio-cultural norms that are context specific. Thus, prompting the study to critically investigate the socio-cultural factors influencing infant feeding practices, to highlight the emerging complexities of socio-cultural factors and, the perception towards infant feeding regulations among HIV positive women. This study therefore, sought to answer the following research questions:

1.3 Research Questions

The main study question was: what socio-cultural factors influenced infant feeding practices among HIV positive women attending post-natal clinic at Kisumu East sub-County Hospital, Western Kenya?

This study aimed at answering the following specific research questions:

1. How was the weaning of infants practiced among HIV positive women attending Kisumu East sub-County Hospital post-natal clinic?
2. What socio-cultural factors influenced weaning practices among HIV positive women attending Kisumu East sub-County Hospital post-natal clinic?
3. What were the perceptions of the HIV positive women attending Kisumu East sub-County Hospital post-natal clinic towards PMTCT infant feeding guidelines?

1.4 Objectives of the Study

The general objective of this study was to investigate the socio-cultural factors influencing infant feeding practices among HIV positive women attending post-natal clinic at Kisumu East sub-County Hospital. More specifically the study sought to:

1. Find out the weaning of infants as practiced among the HIV positive women attending at Kisumu East sub-County Hospital post-natal clinic.
2. Examine the socio-cultural factors that influenced weaning practises among the HIV positive women attending Kisumu East sub-County Hospital post-natal clinic.
3. Assess the perception of the HIV positive women attending Kisumu East sub-County Hospital post-natal clinic towards PMTCT infant feeding guidelines.

1.5 Justification of the Study

Infant feeding is mostly women's business in the sub Saharan Africa, thus prevention of MTCT through safer infant feeding wholly depends on them. It was from this background that this study, in seeking to find out the infant weaning practices among HIV positive women, could be used to increase the knowledge gap on how best infant feeding could be implemented in the PMTCT program in resource limited settings. It is important to understand how various socio-cultural practices and perceptions of the respondent influenced their weaning practices. This is because infant feeding practice is critically important for an HIV-infected woman, as it may either potentially save her child's life or expose the new born infant to unacceptable high risks of infections such as HIV transmission, diarrhoea and malnutrition, yet the socio-cultural context within which breastfeeding takes place can influence weaning practices. This was important in increasing knowledge on how best to achieve the Millennium development goal (MGD) of reducing by two-thirds, the under-five infant mortality by 2015 in Kenya through optimal implementation of infant feeding regulations among HIV positive women.

1.6 Scope and Limitations of the Study

This study was conducted at the post-natal clinic for HIV positive women and their infants at Kisumu East sub-County Hospital. The hospital has a separate post-natal unit where HIV positive women and their infants are followed-up. A convenience sample of HIV positive women who brought their infants to Kisumu East sub-County Hospital for post-natal clinic were interviewed. A peer counselor, a clinician, a coordinator of PMTCT project and the women who were members of post-test support group were purposively sampled from their monthly meeting, and interviewed. The results can only be used to generalize for a population under the same socio-cultural context of the study population. The purposive sampling method was chosen because it targets a specific group of people, often a small group rather than a more general population. Also, the results are expected to be more accurate than those achieved with an alternative form of sampling. However, the results cannot be used to generalize to a different population.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature on the weaning process in infant feeding and the socio-cultural factors associated with infant feeding. The perceptions of the community to PMTCT infant feeding guidelines are also highlighted.

2.2 The Weaning Process in Infant Feeding

The dilemma of HIV transmission through breastfeeding has made infant feeding complex because breastfeeding provides all the nutrients a baby needs for growth and development (Njunga, 2008). PMTCT intervention offers infant feeding counseling to all the women at ante-natal clinic and at post-delivery on the risks and benefits of the optimal choices for HIV positive women. WHO (2010) recommends, exclusive breastfeeding for 4-6 months that is stopped gradually ensuring complementary feeding is introduced at the sixth month while the infant receives prophylaxis. Alternatively, exclusive replacement feeding for 4-6 months then complementary feeding is introduced, and it is only recommended if it meets the accessibility, feasibility, affordability, sustainability and safe (AFASS) conditions (WHO, 2010). These women are supposed to discuss the infant feeding options with their partners and to come up with a joint fully informed decision on how to feed their infants (Bland *et al.*, 2006). Non-adherence to the recommended infant feeding regulations poses risk of MTCT to the infant, thus the need to critically establish the current weaning practices in relation to the recommendations.

In Kenya, there has been an increase in exclusive breastfeeding rates from 13% in 2003 to 32% of children below 6 months in 2010 (KNBS and ICF Macro, 2011). However, early weaning is a common practice while breastfeeding continues. According to a study conducted in Dar-es-Salaam, exclusive breast feeding among HIV positive mothers was high from birth to 2 months (80%), decreasing rapidly at the age 3 to 4 months (34%) and lowest among infants of six months (13.3%) with a median duration of 3 months (Young *et al.*, 2010). Exclusive breastfeeding and pre-lacteal feeding is common in an infant's early

life, though as the infant grows exclusive breastfeeding is rarely practiced in Africa (Matji *et al.*, 2009; Iliff *et al.*, 2005). Yet, early supplementation increases the risk of MTCT of HIV (Fisk *et al.*, 2010; Mhrshahi *et al.*, 2008). These studies have pointed the knowledge gap among the women on the risk of mixed feeding to MTCT which could have resulted from inadequate counseling. However, there is no consistency in the way exclusive breastfeeding is practiced in different communities. Therefore, there is need to identify the infant weaning practices in different set-ups in order to develop context specific interventions to promote exclusive breastfeeding (Ochola, 2008). However, KAIS 2012 show that PMTCT awareness has increased (73%) in Kenya thereby prompting the study to examine if increased PMTCT awareness has translated into the recommended infant feeding practices.

Mixed feeding is a common practice by both the HIV positive women who are breastfeeding and those feeding their infants on formula. In Botswana, 80% of mothers who were assigned to formula feed were exclusively formulae feeding and only 27% of those assigned breastfeeding were exclusively breastfeeding for the first 6 weeks (Seidel, 2004). Baloyi *et al.*, (2005) showed that among the infants who were breastfed in South Africa, exclusive was only 4.6%. This was as a result of the norm of mixed feeding. Additionally, free formulae were provided thus the issue of affordability did not arise. In both studies in South Africa and Botswana, the norm of early introduction of other foods and pre-lacteals, apart from breast milk or replacement feeds, was common. Yet, mixed breastfeeding quadrupled mother-to-infant HIV transmission and was associated with a three times greater risk of transmission and death by age 6 months when compared to exclusive breastfeeding (Iliff *et al.*, 2005). The low exclusive feeding indicate the knowledge gap on the risk of MTCT resulting from mixed feeding prompting the study to examine if the current weaning practices are adhering to the WHO recommendations resulting from increased PMTCT awareness (73%) in Kenya (KAIS, 2012).

Similarly, Magoni and Giuliano (2005) claim that, it is near impossible to adhere to EBF and ERF because both are alien concepts in African societies where mixed feeding is the norm. In many Sub-Saharan Africa societies, exclusive breastfeeding is considered by far

the best feeding option for women of unknown HIV status and for most HIV positive mothers, although it is challenged by low acceptability and feasibility (Cames *et al.*, 2009). Based on the various studies cited, the practice of EBF had varying magnitude in different set ups, but they fell short of the WHO's recommendation of exclusive breastfeeding for six months. However, due to high PMTCT awareness in Kenya aimed at addressing the misconceptions reported by the various studies, it was critical to examine the current weaning practices aimed at identifying gaps and how to address them.

2.3 Social and Cultural Factors Associated with Infant Feeding

The success of exclusive breastfeeding and exclusive formula feeding depend very much on the cultural acceptability of these options. According to a study done in Tswane, South Africa, 25% who intended to formulae feed their infants were breastfeeding while 50% of 52 women planning to breastfeed switched to formula feed (Matji *et al.*, 2009). This contrasts with the findings in KwaZulu-Natal, where there was 78% adherence to breastfeeding and only 42% adherence to replacement feeding (Bland *et al.*, 2003) and in Kenya where, at least 30% of mothers who were assigned to formulae feed their infants were breastfeeding (Rutenberg *et al.*, 2003). The contrast in these studies could be attributed to intensive counseling and PMTCT awareness in the Tswane study leading to more acceptance to formula feed. The reason given in the studies done in Kenyan and KwaZulu-Natal was that formula feeding of infants was stigmatized. The women also found it more convenient to breast feed than to formulae feed because the latter required preparation. Other studies in Ghana and Tanzania found that breastfeeding is a social norm and a culturally entrenched practice (Awumbila, 2003; Davis *et al.*, 2003; Leshabari *et al.*, 2007). The missing information is whether the social cultural factors influencing infant feeding practices has changed with the level of MTCT awareness in Kenya. Thus, prompting the current study to focus on social cultural factors and how they have affected the infant feeding practices.

Among Lebanese women, concerns that the mother could potentially harm her infant through breastfeeding were rooted in a number of cultural beliefs including having an

inherited inability to produce milk, having "bad milk", and transmission of abdominal cramps to infants through breast milk (Bandyopadhyay, 2009). Other hindrances to exclusive breastfeeding mentioned include the perception of insufficient breast milk, fear of becoming too sick to breastfeed, (Fjeld *et al.*, 2008). While, other studies have reported belief that infants were thirsty and needed water, this led to non-adherence to exclusive breast feeding (Laar and Govender, 2011; Leshabari *et al.*, 2007). These findings agree with other studies in China (Xu *et al.*, 2009) and in Kenya (Ochola, 2008) which have shown perceived breast milk insufficiency as a reason for discontinuing exclusive breastfeeding. From most of the studies, cultural practices do not agree with exclusive breastfeeding for 6 months as recommended for HIV positive women. However, this varies from one community to another, thus prompting the study to identify the social cultural factors that may affect exclusive breastfeeding in different communities so that they can be addressed during promotion of appropriate breastfeeding practices.

A study in Botswana and Ethiopia revealed wide-spread mixed feeding among HIV positive mothers as they yielded to social pressure from a community in which individuals, families and neighbors freely intervened in each other's child rearing activities (Mompoti *et al.*, 2006; Maru and Haider, 2009). In the Ethiopia study (Maru and Haider, 2009), the fear of being uncovered as HIV positive was also a reason for non-adherence to exclusive breastfeeding. In Uganda (Fadnes *et al.*, 2009), some women even after intensive counseling, practiced mixed feeding while others refused to breastfeed their infants after knowing they are HIV negative before 6 months leading to malnutrition of the infants. The missing link is to incorporate the social-cultural factors in safer infant feeding options which is lacking in PMTCT, yet, they are risk factor to MTCT of HIV. Also, the social cultural factors are dynamic and are dependent on awareness thus it was important to understand the socio-cultural factors influencing exclusive breastfeeding in different set-ups in order to develop context specific interventions to promote exclusive breastfeeding (Ochola, 2008).

2.4 Perceptions of the Women Regarding Exclusive Breastfeeding or Formula Feeding

The women's perception regarding safer infant feeding for the HIV positive women is important in the era of HIV/AIDS. Studies conducted indicate, participants felt that exclusive breastfeeding was demanding both physically on the mother's body (Bentley *et al.*, 2005) and on the mother's time (Kakute *et al.*, 2005) such that they could not just sit down in order to exclusively breastfeed their infants without going to their fields to work. Similarly, mothers in Malawi (Bentley *et al.*, 2005) felt that exclusive breastfeeding would increase the progression of HIV. In contrast to these studies, a study in Uganda (Ampeire, 2008) showed that 66% of the respondents perceived exclusive breastfeeding as having no disadvantage and the reason they did not exclusively breastfeed was that breast milk was not enough, while only 20% agreed that it depletes the mother's health. Based on factors identified by various studies, there is a need to establish if perception of women towards recommended infant feeding practices have changed with increased PMTCT awareness. Thus the study examined the perception of the women with an aim of informing policy in effective implementation of infant feeding practices.

Studies have reported cost and socio-economic status of the HIV positive mothers as important barriers to replacement feeding (De Paoli *et al.*, 2004; Kuhn *et al.*, 2004). According to Sebalda *et al.*, (2006), mothers are generally uncertain about the use and confidence in infant formula. While other studies show, mothers in particular face social pressures to breastfeed and those who formulae feed are stigmatized (Baloyi *et al.*, 2005; Rutenberg *et al.*, 2003) making it difficult for respondents to cope. Cow's milk was regarded as the most feasible and acceptable replacement feeding method but some women expressed concern that it would not be affordable in rural settings (Manongi, *et al.*, 2003).

Despite evidence from various studies on exclusive breastfeeding being best for infants, many women are unable to practice it. Yet, very little is known in Kisumu about HIV-positive mothers' perceptions regarding exclusive breastfeeding. In order to effectively promote exclusive breastfeeding among these mothers, it is important to first understand their perceptions on benefits of exclusive breast feeding and replacement feeding since

perception is context specific and determines practice. Thus, prompting the study to examine perceptions on EBF and its influencing factors among the HIV positive women.

2.5. Theoretical Framework

This study was guided by the social network theory (SNT) and theory of planned behaviour/reasoned action (TPB/RA). The social network theory argues that social relations, in which every individual is embedded, may be viewed as a network. A social network is a social structure made up of individuals or organizations that are tied by one or more specific types of relations, such as values, visions, idea, financial exchange, friends, kinship, dislike, conflict, trade, web links, sexual relations, health conditions or airline routes (Kadushin, 2012). These social networks operate at many levels, from families up to the level of nations, and play a critical role in determining the way problems are solved, organizations are run, situations and conditions are handled and the degree to which individuals succeed in achieving their goal (Kadushin, 2012).

Social network theory views the attributes of individuals as less important than their relationships and ties with other actors within the network. It focuses on social relations and the flow of resources within networks of actors and investigates the emerging patterns of social order generated over time (Kadushin, 2012). This theory, therefore, looks at the extent to which the structure and composition of ties affect norm. This is because, norms are determined by the degree to which they are perceived and by the sanction available to enforce them. Expectations and norms are also a function of the degree to which information is exchanged between the actors. It is thus possible for two actors of a social relation to hold different expectations about the role relation which, in turn, may be at variance with the expectations of their audience. Furthermore, these expectations are influenced by other roles they play, by their cultural, physical and biological environment (Freeman, 2004).

This study used an illustration of a many bladed hand fan to explain the respondents' transactions. Each blade represented an activity field which was viewed as a partial

network consisting of sets of persons who actually or potentially have a relation in common by virtue of their role in that activity field (Freeman, 2004). All these blades converge at one point, with the respondents being at the centre of this network. Her social relations are derived from the many different activity fields in which she participated; they are in fact role relations. An individual respondent played many different roles: a mother, a wife, a neighbour, an employee, a support group member, and so on. By virtue of playing many different roles, she came into contact with particular sets of actors or people who hold different values, visions, and ideas about infant feeding. Hence, the respondent developed a network through her social relations that influenced the infant feeding practices that she adopted. The interactions of the respondents within their support groups, their family members like their male partners, their mothers, mother's/sister's in-law and health care system influenced their perception and socio-cultural factors that in turn influenced their infant feeding practices.

Based on the interactions within their networks, the respondents practiced infant feeding based on their own judgment on what they consider to be the most appropriate and feasible for their own individual conditions thus theory of TRA/TPB was applied. TRA was formulated by Ajzen and Fishbein, on the basis of results from attitude research from the expectancy value models (Fishbein, 1996). The two formulated TRA after trying to estimate the discrepancy between attitude and behaviour. Thus, TRA was related to voluntary behaviour and works successfully when applied to behaviours that are under a person's volitional control. Later on, behaviours appeared not to be 100% voluntary and under control, leading to the addition of perceived behavioural control. If behaviours are not fully under volitional control, even if a person may be highly motivated by her own attitudes and subjective norms, she may not actually perform the behaviour due to intervening environmental conditions. With this addition, the theory was called the theory of planned behaviour (TPB). It is a theory which predicts deliberate behaviour, because behaviour can be deliberative and planned (Madden *et al.*, 1992). According to TPB/RA, the most important determinant of a person's behaviour is his/her intention to perform the behaviour and that this intention is in turn a function of his/her attitude toward the behaviour and his subjective norms (Madden *et al.*, 1992).

The individual respondent's beliefs regarding specific infant feeding practices, her motivational factors, her perception on whether her significant others would approve/disapprove the infant feeding practice in question and her ability to perform it played a critical role in determining their infant feeding practices. SNT was used to explain the socio-cultural factors influencing infant feeding practices and the perceptions of women on infant feeding regulations while TPB/RA was used to explain the infant weaning practices. The respondents that had a favourable attitude towards breast feeding and perceived their subjective norm would approve of it and felt they had the resources, practised breastfeeding. However, the practice was not as per the recommendation because they believed their subjective norms and themselves, did not believe in their ability to exclusively breast feed for 4-6 months. The perception of the women on their ability and availability of resources to practice a given infant feeding method would influence their practices.

CHAPTER THREE

RESEARCH METHODOLOGY

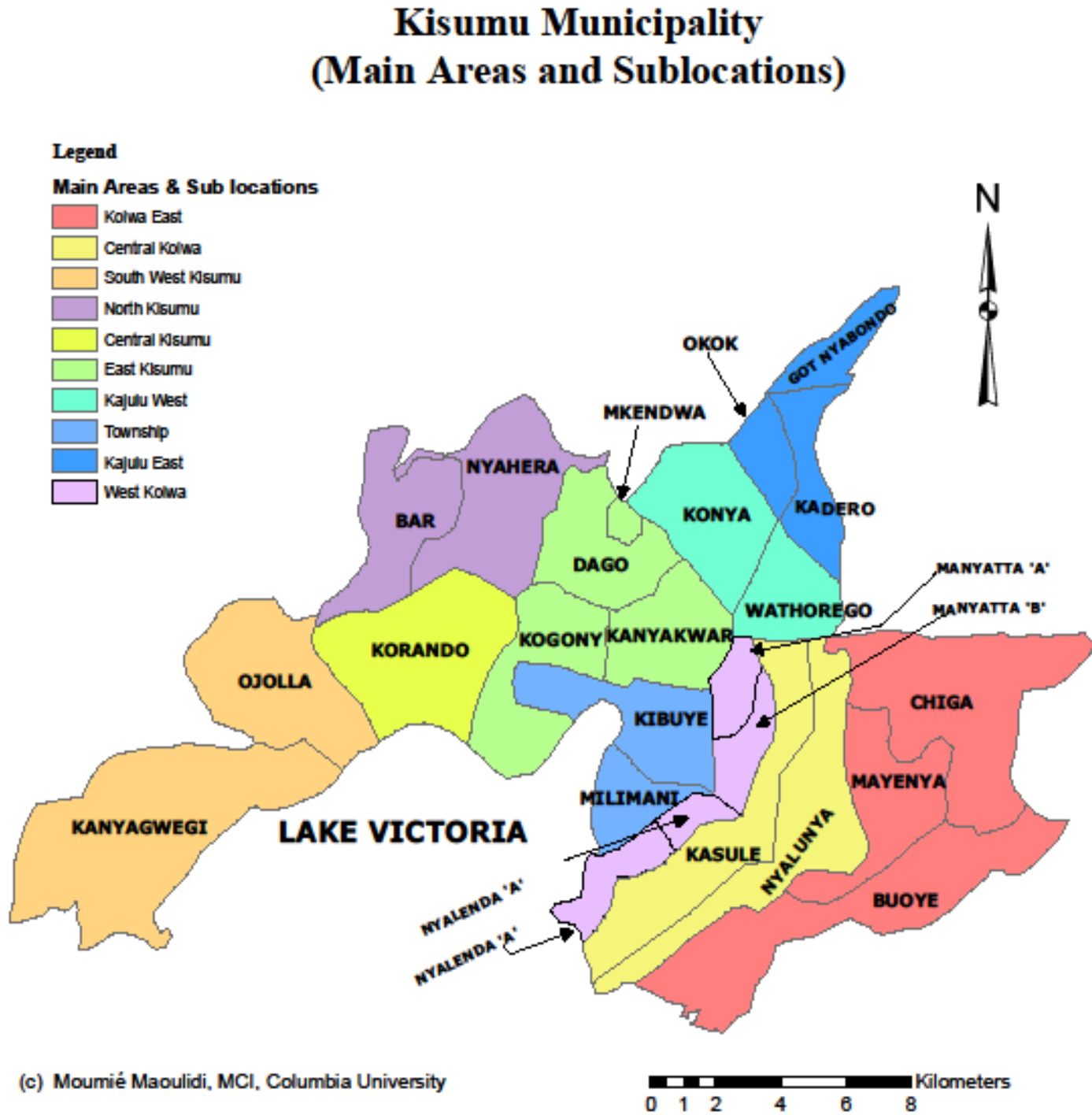
3.1 Introduction

The purpose of this chapter is to describe the study area, study population, unit of analysis, and study design. This chapter also describes the sampling procedure and sample size, as well as the methods of data collection and data analysis. This provided framework on to which the findings of the research were founded.

3.2 Study Area

The study was carried out in Kisumu East sub-County Hospital, Kisumu County, Western Kenya. The hospital is the only sub-County hospital with a separate post-natal unit where HIV positive women and their infants are followed-up. The hospital is situated in Kisumu township sub-location, Kisumu East sub-County, Kisumu County. The county covers 0.36% of the total land mass in Kenya, hugging the Winam Gulf's northern to south-eastern shores on Lake Victoria, located between longitudes 35° 28' and 35° 36' and latitudes 0° 12' and 1° 10' South. The sub-county covers an area of 135.9 km² with a population of 150,124 people (KNBS and ICF Macro, 2011). In Kisumu County, HIV prevalence was about 17% among women aged 15-49 years (KAIS, 2012), infant mortality was 95 per 1000 live births with an absolute poverty level of 40% (KNBS and ICF Macro, 2011). The enrollment in primary school and secondary school stood at 240,538 and 38,815 in 2009 (KNBS and ICF Macro, 2011). The high poverty levels and low literacy levels in Kisumu complicates the implementation of safe infant feeding options available to the HIV positive women.

Figure 1: Map of Kisumu Municipality (Main Areas and Sub-locations)



Source: NCPD, 2011. Retrieved, March, 2014.

3.3 Study Population and Unit of Analysis

The study population comprised of 476 women whose infants were ever registered in the PMTCT-plus clinic of which about 270 women were attending the follow-up clinic each month (MOH, 2010). This included the women who brought their infants to the PMTCT-plus clinic or women who were members of a post-test support group attached to the Kisumu East sub-County Hospital and were registered at the clinic. Peer counselor, a clinician and a PMTCT coordinator attached to the Maternal Child Health Clinic (MCH) at Kisumu East sub-County Hospital were the key informants because they offer infant feeding counseling at the hospital. The unit of analysis was the individual woman who attended the post-natal clinic or was a member of a post-test support group.

3.4 Study Design

The design of the study was cross sectional. It was used to collect qualitative and quantitative data. This design was preferred because of its ability to collect diverse data within a short period. The first phase comprised of administering a semi-structured questionnaire with both open and close ended questions which was used to collect both quantitative and qualitative data. The questionnaire was self-administered to HIV positive women who brought their infants for the post-natal at the PMTCT-plus clinic. Face to face interviews were conducted where a woman was unable to handle an irritable infant and at the same time fill in the questionnaires, and to clarify responses that were unclear. The quantitative and qualitative data generated in this first phase were explored further during the 3 focus group discussions (FGDs) and 10 in-depth interviews (IDIs) conducted.

The second phase of the study involved conducting key informant interviews with a peer counselor, a clinician and a PMTCT Coordinator attached to the Maternal Child Health Clinic (MCH) at Kisumu East sub-County Hospital. An in-depth interview of selected women of post-test support group, attached to the clinic and the women who visited the PMTCT-plus clinic with their infants was carried out. The post-test support group is a group of women who had tested HIV positive, had or were attending the post natal clinic with their infants and were meeting in the hospital on a monthly basis as peers for psycho-social support. The PMTCT-plus clinic is a post natal clinic where HIV positive women

and their infants are followed up on a monthly basis until the infants attain 18 months of age. In this phase, FGDs with women from the post-test support group and the women who visited the PMTCT-plus clinic with their children was conducted.

3.5 Sampling Procedure and Sample Size

3.5.1 Sampling Procedure

Non-probability purposive sampling was used to select the study sample which was based on the knowledge that the population was HIV positive women attending post natal clinic with their infants which was linked to the purpose of the study. A peer counselor, a clinician and a PMTCT Co-coordinator at the PMTCT-plus clinic were sampled for the key informant interview. Five women who were members of the post-test support group were purposively selected during their monthly meeting. The inclusion criteria was that the woman must have had her infants attend post-natal follow-up clinic at the PMTCT-plus clinic and must be in attendance of the post-test support group meeting. The researcher had to attend the support group meeting, identify a participant, then verifies with the respondent if she does meet the criteria for being included in the sample and was willing to participate. If she did, the researcher asked her the rest of the IDI questions. This was done until a target of 5 women was achieved. If she did not meet the criteria, the researcher moved to the next woman.

Five women from the women who visited the PMTCT-plus clinic with their infants were purposively selected for the in-depth interview. The researcher visited the PMCT-plus clinic and on the queue looked for the women who may have brought their infants to the clinic. The researcher had to then verify with the respondent if she does in fact meet the criteria for being included in the sample and explaining to her the purpose and procedure involved in the study and asked if she was willing to participate. If she did, the researcher asked her the rest of the IDI questions. If they did not meet the criteria, the researcher moved to the next woman.

The same sampling procedure was followed for FGDs participants except, the age of last born infant of the woman also formed an inclusion criteria. First session of FGD comprised

of 9 women who had infants within an age bracket of 3 months of which 5 were sampled from the post-test support group during their monthly meetings and the other 4 were purposively selected from the women who visited the PMTCT-plus clinic with their infants. The same methodology was applied for session 2 and 3 of the FGD but it was conducted with women with infants of age 4-6 months and, above 6 months respectively.

Convenience sampling was used to select 158 women who visited PMTCT-plus clinic with their infants during the study period, to whom the structured questionnaire was administered. The researcher visited the PMCT-plus clinic and on the queue looked for the women who may have brought their infants to the clinic. The researcher had to then verify with the respondent if she does in fact meet the criteria for being included in the sample and explaining to her the purpose and procedure involved in the study and asked if she was willing to participate. If she did, the researcher let the woman self-administer the questionnaire. Face to face interviews were conducted where a woman was unable to self-administer and to clarify responses that were unclear. This was done until a target of 158 women was achieved. If she did not meet the criteria, the researcher moved to the next woman.

3.5.2 Sample Size

Assuming standard error of 5% and confidence interval of 95%, the sample size for this study was determined using the formula: $n_f = \frac{n}{1+n/N}$ (Mugenda & Mugenda, 2003).

$$n_f = \frac{n}{1+n/N}$$

Where;

n_f = desired sample size when the population is less than 10,000,

N = desired sample when the population is more than 10,000,

n = estimate of the population size.

Using the above formula sample size is:

$$n_f = \frac{384}{1+384/270}$$

$$1+384/270 = 158$$

3.6 Data Collection Methods

The study collected data from the hospital settings, for 10 days, with the assistance of two research assistants. The lead researcher and lead assistant conducted key informant interviews and focus group discussions. Data from individual respondents who visited the PMTCT-plus clinic with their infants were collected using semi-structured questionnaire. Focus group discussions (FGD) and in-depth interview guides were used to collect qualitative data from the respondents who were members of the support group attached to the facility and women who visited the clinic with their infants.

3.6.1 In-depth Interview

A peer counselor, a clinician and a PMTCT Co-ordinator attached to the PMTCT-plus clinic were the key informants in this study. The key informants provided information on the infant feeding counseling given to the women and their experiences with the patients who attend the clinic. The in-depth interviews were administered to 5 women who visited the PMTCT-plus clinic with their infants and 5 women who were members of the support group. These interviews provided shared experiences and understanding of the practice and weaning process of infant feeding. The social and cultural factors influencing these practices were also explored. This was conducted in English and Dholuo, depending on the language each participant was comfortable with. Open-ended questions were administered and the responses were tape recorded during the interview. The recorded interviews were then downloaded to voice decoder, a computer software, listened to and typed. Only the interviews that were administered in Dholuo were transcribed.

3.6.2. Focus Group Discussion

Three FGDs were conducted comprising of two groups of 9 women each and one group of 8 women, who were relatively homogenous in terms of age of their infants. This was to allow free and open discussion. After 3 FGDs were held, it was realized that data had attained saturation. Data that was initially gathered through questionnaire, discussions with 2 key informants and 10 in-depth interviews formed the basis for FGDs. The emerging issues were thereafter explored further in the FGDs which were lumped into common themes. This was then coded and analyzed using content analysis method. This discussion

generated qualitative data on the weaning process of infant feeding as practiced among HIV positive women. The socio-cultural factors influencing the infant feeding practice, the opinion of the HIV positive women on exclusive breastfeeding and breast milk replacement feeding was also generated.

3.6.3. Semi-structured Questionnaire

A semi-structured questionnaire with both open-ended and closed-ended questions was administered to 158 HIV positive mothers who were selected by convenience sampling method from those who brought their infants for post natal follow-up at the PMTCT-plus clinic. The socio-demographic characteristics of the women were collected. Data were also collected on the stage at which weaning was introduced to the infant, how it was done, their perception toward PMTCT infant feeding regulations and the socio-cultural factors influencing their practices. This instrument collected mainly quantitative data and some qualitative data.

3.7 Data Analysis

The data collection tools were pilot-tested in the field and modified before and during the collection process. The qualitative data was analyzed using content analysis. This consisted of reading and re-reading the field notes and transcribed texts and a manual coding in the margins was done. The key ideas and emerging themes from the coded responses were identified and pooled together which were then integrated into common themes. The number of responses for each theme was then counted. Separate code sheets were created for in-depth interviews, key informant interviews and FGDs. The socio-cultural factors influencing infant feeding practice was mainly analyzed using content analysis method. The filled questionnaires were checked for completeness and responses given by the informants were assigned codes and the variables defined before the data entry. The fields were checked and validated before analysis. Descriptive, frequency tables and cross tabulated data were generated to summarize the infant feeding practice.

CHAPTER FOUR

INFANT WEANING PRACTICES EMPLOYED BY THE HIV POSITIVE WOMEN

4.1 Introduction:

This chapter presents the results and discussions of the current study on the socio-demographic characteristics of the respondents and their weaning practices. The weaning practices include infant feeding method at birth, age at initiation of weaning and the weaning pattern.

4.2 Socio-Demographic Characteristics of Respondents

A total of 158 respondents were interviewed using the questionnaire and their socio-demographic characteristics are presented in Table 4.1 below. However, one participant declined to respond to the questionnaire. Out of the 158 respondents who participated in this study, the majority (70%) were aged 21-30. The age of infants of the respondents interviewed was 0-18 months. These data are typical of a PMTCT-plus clinic, where the HEIs are followed up for 18 months from birth.

Table 4.1 Age Distribution of Respondents

Age category	Frequency	Percentage
20 and below	21	13.3
21-25	55	34.8
26-30	56	35.4
31-35	20	12.7
above 35	6	3.8
Total	158	100.0

A majority of the respondents were married or at least once married with only (8.2%) indicating they were never married (Table 4.2). All the respondents who were never

married were living with and were supported by either a parent or guardian while 4 headed their households and were self-supporting. For the former group of respondents, the infant feeding practice was dependent on their parents or guardian.

Table 4.2 Marital Status of the Respondents

Marital status	Frequency	Percentage
Married (monogamous)	97	61.4
Married (polygamous)	31	19.6
Married (inherited)	3	1.9
Separated/divorced/widowed	14	8.9
Never married	13	8.2
Total	158	100.0

The most common highest level of education completed was primary education (37.3%) with 1.3% having had no formal education (Table 4.3). This is representative of Kisumu County's low secondary education enrollment of 38, 815 in 2009 (KNBS and ICF Macro, 2011).

Table 4.3 Highest Level of Education Attained by the Respondents.

Highest level of Education	Frequency	Percentage
No education	2	1.3
Primary education (not completed)	32	20.3
Primary education (completed)	59	37.3
Secondary education (not completed)	23	14.6
Secondary education (completed)	33	20.9
College level	7	4.4
University level	2	1.3
Total	158	100.1

Of the 158 respondents interviewed, 41.8% were in informal employment with the majority engaged in small-scale business which ranged from selling foodstuffs, beauty products/clothes to other service provision activities such as running salons and washing clothes for commercial purposes, while others practised subsistence farming. Although 49.4% of the respondents were captured as unemployed/ housewives, most of them were involved in subsistence farming which they perceive as no employment. Based on this finding, about 8.9% of the respondents were in formal employment of which non-professional and professional were 60% and 40%, respectively.

The findings depict low socio-economic status of the respondents and their families. Almost half the participants (46.2%) earned a monthly family income of KES.1000 and below (Table 4.4). This translates to less than the one dollar a day income that is used to define the poverty line (KNBS and ICF Macro, 2011). The data from the current study corroborate data from Kisumu County which indicate that 40% of the population lives below the poverty line (KNBS and ICF Macro, 2011). Despite the low income level, the majority (76.6%) of the respondents reported that they purchased food stuffs from the shop/market with only 15.2% obtaining food from the family farm and 4.4% from donations excluding gifts. Although 3.2% reported that they obtained food from the family farm, they occasionally purchased groceries from the shop. Thus, in spite of the low socio-economic status, food availability to the household, including the infant, directly (where an infant is on replacement feeds) or indirectly (where breast milk production is dependent on the ability of a mother to feed well), is largely dependent on family income. This could mean that the low socio-economic status of the respondents affects infant feeding practices in the study area.

Table 4.4 Monthly Family Income of the Respondents from All Sources

Total monthly income (in KES)	Frequency	Percentage
1,000 and below	73	46.2
1,001- 5,000	37	23.4
5,001 - 10,000	16	10.1
10,000 - 15,000	2	1.3
above 15,000	8	5.1
not indicated	16	10.1
Missing	6	3.8
Total	158	100.0

The demographic characteristics of the respondents indicate that household size is large with a mean of 5 and a mode of 4-6 members (Table 4.5).

Table 4.5 Size of the Respondents' Household

Age category	Frequency	Percentage
3 and below	33	20.9
4-6	68	43.0
7-9	37	23.4
10 and above	17	10.8
Missing	3	1.9
Total	158	100.0

The engagement of most of the respondents in informal employment, which in many cases yields poor returns, their largely poor economic status at family level and the main source

of food being from purchases, together could influence the opportunities/resources available to the respondents and could potentially affect their infant feeding decisions and practices.

4.3 The Weaning of Infants as Practised by the Respondents

The first objective of this study was to find out the weaning of infants as practiced by the respondents. The analysis of the weaning practice included the food infants were taking at the time of the study, the weaning pattern and the age of infant at the commencement of weaning. This was analyzed in relation to socio-economic and demographic characteristics of the respondents and their families.

Age was mentioned by the respondents as a factor influencing the weaning practice. Participants in one FGD reported that respondents who had older children were expected by the community to guide the younger respondents who had younger children or were having children for the first time on how to feed their infants. One woman expressed in a FGD:

Respondents who had given birth earlier must teach the younger respondents (respondents who have delivered first born) on how to take care of young babies.

This suggests that infant feeding is passed from one generation of respondents to the other. Similarly, studies conducted by Mompati *et al.* (2006) and Maru and Haider (2009) showed age as a factor influencing maternal choice of infant feeding. In the current study, it was noted during FGD that young mothers lacked experience on infant feeding and mostly relied on elderly respondents for advice. Additionally, Bentley *et al.*, (2005) found that adolescents may also be inexperienced and insecure about their own beliefs and logically turn to their families, particularly their mothers and grandmothers, for parenting help. This implies that the network or the kinship ties the respondents have with their families especially older respondents who are perceived as good advisors could have influenced the perception of the respondents on the weaning practice. Similar to findings of the current study, in Ghana, exclusive breastfeeding is culturally considered dangerous to infants since they are believed to be thirsty and so it is recommended that they be given water to quench thirst and promote normal development (Laar and Govender, 2011). This suggests that these older respondents could be lacking the right information on the status of the

respondents, methods of preventing MTCT through infant feeding and the nutritional capacity of the weaning foods, thus influencing infant feeding practices that are not recommended such as mixed feeding.

4.3.1 Feeding of Infants at Birth

A majority (82.3%) of the respondents reported that they breast fed their infants immediately after birth followed by those who reported that they gave their infants replacements (12%) and other foods (3.8%) as shown in Table 4.6. This indicates that exclusive breastfeeding was the most common choice of infant feeding at birth. The exclusive feeding at birth in this study was similar to a study conducted in Dar-es Salam (Young *et al.*, 2010) where, 80% of HIV-infected respondents practised exclusive breastfeeding, at 1 week post-partum. Information from the in-depth interviews showed that the reason for breast feeding immediately after birth was that the respondents were used to it. This suggests that in the context of the current study breast feeding was the norm as an FGD discussant said:

In this community, it is well known that breast milk is the main food for an infant. You can only give other foods as supplements to breast milk.

Table 4.6 Feeding of Infants Immediately After Birth

Method of feeding	Frequency	Percentage
breast milk	130	82.3
Replacements	19	12.0
Other(plain/glucose/salty/water)	6	3.8
System	3	1.9
Total	158	100.0

Only a minority (3.8%) of the respondents reported to have given other foods to their infants at birth. These included plain water, glucose dissolved in water or salt dissolved in water; which was mainly fed to infants before breast milk started to flow after birth. These respondents reported that they could not produce milk at birth and therefore did not believe in their ability to breast feed at birth. Although the number appears small, the replacement

the respondents chose to give their infants at birth does not meet the nutritional needs of their infants putting them at a risk of malnutrition. Additionally, the child is at risk of infections arising from potential poor hygiene and poor water quality that also influences nutritional status, due to the traditional infant feeding practices.

Ten (53%) of the respondents who reported that they fed their infants on replacements immediately after birth gave commercially prepared powdered milk (formula milk) such as NAN, 32% (6) reported that they gave their infants processed whole-cream cow's milk such as KCC, and 16% (3) reported that they gave their infants non-processed home modified cow's milk. This is translated to 6% of all the respondents gave formula milk and, those who gave their infants processed whole-cream cow's milk and non-processed home modified cow's milk on the days the infants were born were 4% and 2% respectively. The information given by the respondents who reported having practised replacement feeding was verified by asking the respondents the average cost of one tin of formulae feed. This finding is contrary to a study conducted by Kiarie *et al.*, (2004) in Nairobi where, of the 41 respondents who were not breast feeding at 6 weeks, 22 gave their infants commercial infant formula (55%), while 5 (12%) gave their infants non-processed home modified fresh cow's milk and 14 (33%) processed whole-cream cow's milk. The high use of formula feeds in the Nairobi study compared to the current study could be attributed to the intensive counselling on infant feeding that was provided to the participants in that study given the ideal conditions required for such research. However, in both studies, use of replacement feeding was low when compared to breast feeding.

In the current study, the respondents in the focus group discussion gave similar reasons as those in the Nairobi study for not giving children cow milk. They reported that that they rarely fed infants on cow milk because it was not readily available and/or they did not keep cows. They also stated that if they were to feed infants on cow's milk, they had to buy it and were uncertain of its safety; they feared the milk could be adulterated by the traders making it unhealthy for their infants. Rather than emanating from respondents' networks, this choice seemed to be influenced by the respondents' own perception of the safety of cow's milk with respect to their infants' health. This could be explained by the theory of

planned behaviour/reasoned action (TPB/RA) that the negative attitude of the respondents on the uncertainty of the safety of cow milk on infant feeding influenced its low use by the respondents. However, it is not clear if they would opt for cow's milk were it to be more readily available such as in the event that they owned a cow/cows.

4.3.2 Respondents' Reasons for Breast Feeding at Birth

The respondents reported varied experiences based on the infant feeding method they adopted immediately after birth. The responses they gave for their experience are given in Table 4.7. The majority of the respondents who opted to breastfeed (71.5%) and those whose infants were fed other foods (83.3%) said they were comfortable, while most of those whose infants were on replacement feeds (61.1%) were uncomfortable with the infant feeding method they were practicing. The respondents who practiced breast feeding gave various reasons for their being comfortable with their infant feeding method. Some (14%) stated that breast milk provides all the nutrients and the energy the baby needs and protects infants from diseases. The term 'for the good health of the baby' was used to explain this reason. The respondents explained that breast-fed infants were healthy which they gauged by the physical appearance of the infant in terms of shiny skin, increased bodyweight, fast development of the baby by learning to sit, crawl and/or walk earlier than usual. Closely linked to health were responses reflecting that the respondents considered breast milk to be safe as 6.5% of them mentioned that breast milk was natural and safe during the first few months of birth and that it had no 'chemicals' that could harm their infants. Other respondents said that breast milk was readily available and sustainable (22.2%), 'free' (10.8%), easily digested by the infants (15.05%) and the respondents are used to it or that it is acceptable as the norm by the community (10.8%). Some (3.2%) respondents reported the ability of breast milk to enhance bonding and the self-satisfaction between the mother and infant. The bonding was reported to enhance their future relations.

Table 4.7 Experiences of Respondents When Feeding their Infants Immediately After Birth

The experience of respondents	Feeding of infants the first day they were born.						
	Breast milk		Replacement		Other		Total
	Frequency	%	Frequency	%	Frequency	%	
Comfortable	93	71.5	7	38.9	5	83.3	105
Uncomfortable	36	27.7	11	61.1	1	6.7	48
Nothing	1	0.8	0	0	0	0	1
Total	130		18		6		154

Breast feeding as a norm of infant feeding featured prominently in all the three FGDs that were conducted. This is based on the networks the respondents had in the community that made them believe that infants must be breast fed without which an infant cannot survive which was further intensified during counseling by the health care workers that indicated the health benefits of breast milk. Bland *et al.*, (2006) suggest that breast feeding is the normal way and breast milk is all the baby needs for the first six months of life. Similarly, a study conducted in Northern Tanzania (Leshabari *et al.*, 2007) indicated that breastfeeding was vital to child survival and was perceived as essential to the survival of the social relations surrounding mother and child. This suggests that breast feeding is considered to improve the bonding between the mother and their children. It appears that the appreciation by respondents of the benefits associated with breast milk such as that it provides nutrients, enhances fast growth, is safe and is affordable motivates them to breast feed. This is an indication that the respondents are motivated by their positive attitude resulting from the information from their networks with the community members and health care workers towards the benefits of breast milk and their perception on ability of breast milk to ensure adequate growth of infants that influenced them to practice it. This was confirmed by a 26 year old IDI informant with a 7 month old infant,

This baby is not the first born; I have fed my other children the same way (breast milk).I feel good when I breast feed because I know my baby will grow normally.

The attitude of the respondents while breastfeeding is informed by their networks with the health care workers and the community and their past experiences with breast feeding that influenced their perception that it is acceptable and beneficial to the health of the infant and that it is a norm.

4.3.3 Foods Given to Infants by the Respondents during Weaning

In this current study, respondents explained that they initiated weaning mainly between 1 and 6 months from birth. The respondents who had initiated weaning gave their infants more than one type of food. Out of the 114 respondents who had introduced other foods at the time of conducting the study, 96 (84.21%) were giving water, 85 (74.56%) porridge, 67 (58.77%) cow's milk, 61 (53.51%) packaged processed milk (referred to as "packet milk"), and 60 (52.63%) fruit juices. This shows that water and porridge were the most common foods first introduced in an infant's life after breast milk or its replacements. Participants reported that porridge was the best supplement to breast milk because it was heavy/thick and therefore when fed to infants kept them satisfied for a long time before they got hungry. They also reported that it provided a lot of energy making the infants active and gain weight fast. The respondents argued that heavy weight infants were healthier than light weight ones thus their preference for porridge. Furthermore, these respondents explained that processed or home modified milk was light and provided similar nutrients as breast milk. They therefore, did not prefer it as supplements.

The respondents reported that community members pressurized them to introduce other foods so that they could be accepted within the community as adequately taking care of their infants. This suggests that the network of respondents with the community members influenced their perception that supplements to breast feeding are appropriate for the development of an infant and at the same time a norm since a woman is perceived by the community as not adequately caring for her baby if she does not wean early. This poses the risk of practicing mixed feeding which is a risk to MTCT.

The belief that porridge was a superior complementary food and may even be better for children than breast milk is of concern. This is because before six months of age, porridge

does not meet infants' nutritional demands and their bodies are not yet developed to digest it. The soft, semi-liquid consistency of porridge is not difficult for infants to swallow, but the starchy nature of porridge can be harmful to the infant's digestive tract and lead to diarrhea and is a pre-disposing factor to HIV transmission (Akre, 1989). The likely effect of early introduction of porridge is that it is not likely to supplement breast milk, but rather replace it; and even if milk is added to the porridge, the nutritional quality of this food is inferior to that of breast milk. Findings by Kiarie *et al.*, 2004 in their Nairobi study show that milk (44%) was the most commonly introduced food followed by water (29%) and porridge did not feature. The explanation could be that the Nairobi study was done at 6 weeks from birth whereas respondents are more likely to wean their infants from two to three months of age (KAIS, 2012). The findings suggest that respondents who introduced foods other than breast milk to the child's diet before the recommended time, equated physical appearance of an infant's food with nutritional capacity therefore their preference of porridge to milk and that when infants gain weight, it is a sign of being healthy. This shows the perception of respondents on the physical appearance of food taken and the growth of infants and that gaining weight was preferred due to information they received in their network with their community members. This shows a gap should on infant feeding counselling on nutritional capacity of food on an infant's growth that could lead to malnutrition and MTCT in infants.

4.3.4 Time of Weaning of Infants by the Respondents

As indicated in section 4.2.3 above, breast feeding respondents weaned their infants mainly between 1 month to above 6 months of age, and respondents rarely weaned below 1 month from birth. In the current study, the age at initiation of weaning of infants was highest (22.9%) at 4-6 months, followed by 22.2 % at 1-3 months then, 17.7% at above 6 months. Fewer respondents weaned their infants below 1 month from birth (13.1%) compared to the various ages at initiation of weaning reported by the respondents in the current study. Similarly, a report (KNBS and ICF Macro, 2011) indicates that the length of exclusive breastfeeding ranged from 1-6 months. The current study shows that about half of the respondents either practised exclusive breastfeeding or weaned at 4-6 months, as recommended. This could mean that through their social network with the health care

workers/peer educators, the respondents received counselling on the infant feeding regulations in PMTCT that weaning below 1 month is a pre-disposing factor to HIV transmission thus was rarely practised.

The findings in the current study show exclusive breast feeding was lower (23%) than in a study conducted among 150 babies in Kitale District Hospital (Siika *et al.*, 2008) where thirty five percent of the babies were exclusively breastfed and 50% were not breastfed at all. In the Kitale study, participants were provided with free infant formula. This could explain the contrasting results. In the current study, the respondents in the FGD stated that they did not have adequate resources/opportunities although they had a positive attitude that formula feeding prevents MTCT. However, availability of resources to purchase formula may not enhance its use by the respondents since issues of sustainability and their perception on its use should be taken into consideration before implementation.

4.3.5 Weaning Pattern of Infants as Practiced by the Respondents

The respondents who had weaned their infants reported that they practised varied weaning patterns which ranged from abrupt weaning, gradual weaning and mixed feeding (Table 4.8). At the time of this study, infant feeding recommendations for feeding HIV exposed infants in Kenya were, exclusive breastfeeding for the first six months of infant's life followed by abrupt weaning was in transition to exclusive breastfeeding for the first six months and then gradually introducing complementary foods while continuing with breastfeeding until one years of the child's life. Abrupt weaning was mainly reported by respondents practising breast feeding (35.2%) and a few whose infants were on replacement feeds (15.8%). Ideally, abrupt weaning for those respondents practising replacement feeding is not practical. The respondents reported in the current study as having abruptly weaned and were practising replacement feeding actually just changed their mode of feeding within the recommendations as they had switched to breast feeding abruptly because two of them could not withstand the community members asking them why they were feeding their infants on 'NAN' (a formula feed) yet infants should be breast fed. This suggests the social network the respondents had with the community members informed them that feeding infants on formulae is not a norm and therefore she resorted to

the norm of breast feeding since she felt she would be stigmatized if she does not comply. One woman had recovered from a surgical operation and resumed breast feeding since she had exhausted ‘NAN’ that was donated to them.

Table 4.8 Infant Weaning Patterns

Weaning pattern	Infant feeding immediately after birth							
	Breast milk		Replacements		Other		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
Abruptly	45	35.2	3	15.8	1	16.7	49	32.2
gradually >2 weeks	18	14.1	0	0	0	0	18	11.8
gradually <2 weeks	11	8.6	4	21.1	0	0	15	9.8
Mixed feeding	24	18.8	4	21.1	5	83.3	33	24.8
Exclusive feeding	30	23.4	8	42.2	0	0	38	24.8
Total	128		19		6		153	

A significant finding from the current study is that some respondents, albeit just a few (15.8%), practising replacement feeding resorted to breast feeding. Various studies that have shown the possible association between the infant feeding patterns among mothers and the risk of MTCT indicate that HIV infection was lower among infants who were exclusively breastfed compared to those who were mixed fed (Coovadia *et al.*, 2007; John-Stewart *et al.*, 2004). This study points the gap on infant feeding counseling and peer support that could have led the respondents to breastfeed after initially practising replacement feeding that has increased risk of infection to the infant.

In addition, exclusive feeding is advocated in PMTCT, in this study mixed feeding was at 24.8% (Table 4.8). This indicates that 24.8% of respondents put their infants at the risk of HIV infection as a result of these choices. This suggests that the network of the respondents with their community members in the current study influenced them to mixed feed their infants which is a challenge to sustainability of exclusive breast feeding. A study showed

that exclusive breast feeding was associated with lower risks of diarrhea and pneumonia (Ilf *et al.*, 2005) and the findings in the current study suggest that respondents believe that breast feeding protects infants from diseases and this motivates them to continue breast feeding. The focus, therefore, should be on spelling out the health benefits of breast feeding while creating awareness and counseling on safe infant feeding to enhance optimal implementation of exclusive feeding.

4.3.6 Relationship between Weaning Initiation and Patterns of Weaning

One respondent indicated having initiated weaning below one month and also exclusively breastfeeding, therefore was excluded from the analysis. A majority (65%) of the respondents who reported initiating weaning at below 1 month, practised mixed feeding (Table 4.9). The reason they gave was that the infants were too young to feed on a variety of foods therefore the main food they fed their infants on was breast milk. It could mean that when weaning is initiated early, mixed feeding is likely to be practiced and as initiation of weaning is delayed, the practice of mixed feeding is reduced. Table 4.9 shows that respondents who initiated weaning below 1 month, 1-3, 4-6 and above 6 months practised mixed feeding at 65%, 32%, 17% and 11%, respectively. The trend could be explained that at 1 month, infants cannot comfortably exclusively feed on other foods without using breast milk since breast milk is the main food for infants. A majority of the respondents who initiated weaning at the age of 1-3, 4-6 and above 6 months, weaned abruptly at 44%, 46% and 55% respectively (Table 4.9). The initiation of weaning of infants below 6 months of age was lower (60% versus 82%) in this study than in a study conducted in Lahore, Pakistan (Razia and Naheed, 2007). Table 4.9 supports a trend which shows that abrupt weaning is increased with age at initiation of weaning. This could mean that the older a child is at weaning, the more willing the mother is to abruptly wean. This could be explained that the infants were perceived to be able to comfortably feed on other foods as they get older enabling the respondents to abruptly wean. Table 4.9 shows that abrupt weaning was the most common weaning pattern.

The respondents stated that it is a norm to practice mixed feeding but they were compelled by their HIV status (positive) to abruptly wean in order to prevent HIV transmission to

their infants. This suggests that the respondents understood the importance of abrupt weaning in PMTCT and believed in their ability to practice it since mixed feeding was reported to be the norm. An IDI respondent commented:

I did not want to give my baby this disease. If i continue to feed him on breast milk and other foods then I will be giving him the virus (HIV). I stopped breastfeeding him at once because I know it was good for the baby to avoid getting used to breast milk which has virus (HIV).

Table 4.9 Initiation of Weaning by Pattern of Weaning

Weaning pattern	Initiation of weaning					Total
	Below 1month	1-3 month	4-6 month	Above 6months	Exclusive feeding	
	n (%)	n (%)	n (%)	n (%)	n (%)	
Abrupt weaning	3(15)	15(44)	16(46)	15(55)	0(0)	
Gradual weaning	3(15)	8(12)	13(37)	9(26)	0(0)	
Mixed feeding	15(65)	11(32)	6(17)	3(11)	0(0)	
Exclusive feeding	1(5)	0(0)	0(0)	0(0)	37(100)	
Total	20	34	35	27	37	153

The percentage is based on number of respondents practising a given weaning pattern within a specific age at initiation of weaning e.g among the 20 respondents who initiated weaning at below 1 month, 15% weaned abruptly and 65% practised mixed feeding.

4.3.7 Summary

The analysis of the weaning practice included the food infants were taking at the time of the study, the weaning pattern and the age of infant at the commencement of weaning. Breastfeeding was the most common infant feeding method at birth, while a few gave their infants replacements and other foods. The majority of the respondents who opted to breastfeed and those whose infants were fed other foods said they were comfortable, while most of those whose infants were on replacement feeds reported they were uncomfortable with the infant feeding method they were practising.

The reasons the respondents gave for their feeding choice at birth were linked to the effect of the specific method in question on the health of the infant. Breast milk was said to provide all the nutrients and the energy the baby needs enabling them to for grow and develop fast, protects infants from diseases, is readily available, safe and acceptable and enhances bonding and the self-satisfaction between the mother and infant. Replacement was chosen by the respondents because it was safe in preventing MTCT to their infants while, other feeds, mainly water, were chosen because the respondents had the perception that they could not produce milk at birth or that their infants needed water to clean their stomach.

Exclusive breastfeeding and abrupt weaning was common compared to the various weaning patterns reported by the respondents. This suggest the recommended infant feeding regulations were practised although not optimally. Porridge was preferred as a weaning food since the respondents equated the thickness of weaning food to its ability to ensure fast development of infant. The findings suggest that as infants get older, respondents were more willing to wean since the infants could easily adjust to the weaning foods; and messages from health worker networks should emphasize the benefits of exclusive breastfeeding as recommended, in an attempt to promote it. Furthermore, mixed feeding was likely to be practiced when weaning was initiated early. The findings also suggest the uptake of exclusive breast feeding and weaning at 4-6 month which were the recommended infant feeding methods is low and abrupt weaning was still practiced despite being phased-out indicating the respondents risk infecting their infants through breast feeding thus the need to explore strategies of adequate counseling to ensure adherence to the recommended infant feeding practices.

CHAPTER FIVE

SOCIO-CULTURAL FACTORS THAT INFLUENCE THE WEANING PRACTICES OF THE HIV POSITIVE WOMEN

5.1 Introduction

This chapter presents and discusses the socio-cultural factors influencing weaning of infants as practiced by HIV positive respondents. These factors were themes emerging from responses the respondents gave to the questionnaire administered and discussions from the FGDs and IDIs. These include the perception of the respondents on; their physical condition, cost of infant food, sufficiency and risk of breast feeding, peer /partner/community support and influence of their social networks.

5.2 Socio-Cultural Factors Influencing Weaning of Infants

5.2.1 Respondents' Perception of their Physical Condition in Relation to Infant

Feeding

The different infant feeding methods practiced immediately after birth was reported to cause varied discomforts by the respondents who practiced them. Nearly half (46.67%) of the respondents who were breast feeding mentioned physical discomfort which included stomach pains and fatigue (Table 5.1). These respondents elaborated this as the stomach pains the respondents experienced when breast feeding their infant caused by contraction of the respondents' uterus as breast milk flows and this pain lasted up to 7 days after delivery. Similar to the finding, a study by Bandyopadhyay (2009) showed that mothers could transmit abdominal cramps to infants through breast milk. Information obtained from the in-depth interviews showed that the pain experienced by the respondents while breast feeding during the first few days after birth worsened with every subsequent birth. This made some of them to occasionally break away from this physical discomfort by stopping to breast feed, making them to give their infants water and other liquids such as fruit juices, milk diluted with water and/or light porridge. This suggests the perception of the respondents on their inability to cope with the physical conditions/ discomfort such as stomach pains, and fatigue they experienced after birth may influence them to introduce other foods early.

A few respondents (1.76%) reported they did not breast feed because they felt they were sick and weak since the delivery of their infants while, others reported that they did not breastfeed because of having had a surgical operation. Similarly , a study conducted by Fjeld *et al.* (2008) showed, women feared they were becoming too sick to breastfeed. Additionally, Newman and Pittman (2000) show that in the first few weeks of breastfeeding, a new mother may commonly experience problems with breast engorgement, nipple soreness and latch-on. This indicates that infant feeding can be a difficult behaviour to practice and, as such, is best practised just as any other social behaviour, in a supportive environment/condition. This may suggest that the perception of the respondents that they were unable to effectively breast feed at birth due to fatigue from birth and physical discomfort both of which require support for them to overcome. A study conducted in South Africa also showed that respondents practicing exclusive feeding were bolstered by family members who were aware of their HIV status (Chopra *et al.*, 2005). The South African study further reveals that one of the major challenges facing respondents in adopting and adhering to the current recommendations is access to good quality information on coping mechanism to the discomforts. The South African study cited above supports that provision of adequate information aimed at informing women on coping mechanisms to challenges associated with exclusive breastfeeding. Lessons from the current study on could inform enhancement of adherence to the recommended exclusive breast feeding through targeted counseling by healthcare workers and lobbying for family support and disclosure. Hence when professional knowledge/ peer support is unavailable to help the new mothers to cope with such issues, a decision to revert to other feeding options is predictable which could constrain the decision to exclusively breast feed.

Table 5.1: Discomfort Experienced by Respondents who Practised Exclusive Breast Feeding Immediately after Birth.

Type of discomfort	Freq	Percentage
Physical discomfort to mother	21	46.7
Fear of HIV transmission	19	42.2
Cost implications	3	6.7
Medical treatment/ surgery of mother	2	4.4
Total	45	99.9

5.2.2 Cost of Infant Food in Relation to Infant Feeding

Half of the respondents whose infants were on replacement feeds reported that they were uncomfortable with its cost which ranged from affordability to sustainable provision (Table 5.2). Poverty is high in the area and families can barely afford their daily food let alone replacements to breast milk. The poverty level is reflected in this study (Table 4.4) where half of the respondents (46.2%) earned a monthly family income of Kshs.1000 and below and Kisumu district which indicates that 40% of the population lives below the poverty line (KNBS and ICF Macro, 2011). However, most of them felt that the long term benefits of preventing HIV transmission to their infants far outweighed the short term cost implications of purchasing replacement feeds. The findings from the FGDs show that the respondents felt there could be occasional stock outs of replacements to breast milk due to lack of or inadequate funds as indicated above by the low socio-economic status of the participants. However, while the respondents were knowledgeable of formulae feeding, their awareness of other available options such as animal milk, wet-nursing and expressed heat-treated breast milk was limited and this can be attributed to a gap in quality of counseling. These findings are consistent with similar studies in Tanzania (de Paoli et al., 2004), Thailand (Talawat et al., 2002) and in South Africa (Thairu et al., 2005). Even those respondents who were breast feeding cited cost as a major barrier to the adoption of exclusive breast feeding. This shows that improvement of maternal nutrition during lactation is important for both mother and infant (because of the link between the constitution of breast milk to the mother's dietary intake and cost of formula (Nduati *et al.*, 2001), both of which are dependent on income.

Despite cost featuring as the main factor affecting its low use, provision of replacements free of charge may not enhance its use due to stigma associated with feeding infants on replacements. This is confirmed by findings in Table 5.2 below. Similarly, in a PMTCT trial conducted in Burkina Faso, Cames *et al.* (2010) show that replacement feeding was made easier to implement as formula was provided free, mothers opted to breastfeed essentially out of fear of family rejection/stigma. This suggests that despite the respondents being aware that replacement feeding prevents MTCT and were given free formula, they were demotivated by their own perception that they would be stigmatized if they deviated

from the norm of breast feeding and that they would lose their social network with their community (they viewed their individual attributes as less important than their network with the community) thus breast fed their infants. Hence, the finding show that replacement feeding would be challenging to implement since breast feeding is socially and culturally entrenched practise.

Table 5.2: Discomfort Experienced by Respondents who Practised Use of Replacements to Breast Milk Immediately after Birth.

Type of discomfort	Freq	Percentage
Cost implications	7	50
Fear of stigma/ violence	5	31.71
Other(preparation of the feed)	2	14.29
Total	14	100

5.2.3 The Value Respondents Attached to Exclusive Breastfeeding of Infants

Exclusive breastfeeding is one of the recommended infant feeding modes during the first 4-6 months to prevent MTCT (WHO, 2010). In the current study, 23.4% (Table 4.9) of the respondents reported that they were exclusively breast feeding. This suggests that respondents were practising the infant feeding recommendation of exclusive breast feeding, albeit less than one quarter of them. Many reasons were given for exclusive breastfeeding. One reason was that the respondents were waiting for their infants to reach the weaning age which varied from one respondent to another but the majority mentioned 4 months as the weaning age. Other reasons given were that exclusive feeding made their infants gain weight and grow strong without frequent attacks by diseases, breast milk alone was enough to satisfy their infants while some respondents reasoned that they themselves ate quality foods that provided enough breast milk for their infants. The respondents also reported that their infants were too young to feed on other foods because such foods could cause irritation of the infants' stomach which would increase the risk of HIV transmission to the infant; and that their infants could not digest the foods. Its ability to prevent MTCT also determined the commitment of the respondents to exclusively breastfeed. On the contrary,

Magoni and Giuliano (2005) claim that, practising exclusive feeding is near impossible to adhere to because they were alien concepts in African societies where mixed feeding is the norm. While, Matji *et al.* (2009) and Iliff *et al.* (2005) showed that exclusive breast feeding common in an infant's early life, but agrees that as the infant grows it is rarely practiced in Africa. This is an indication that the respondents in the current study had internalized infant feeding counseling on the benefits and satisfaction derived from exclusive breastfeeding through their interaction with health care workers. This suggests that when breastfeeding is perceived to be a positive experience with positive outcomes on their infants, respondents are likely to continue to breastfeed successfully. An IDI respondent commented,

If I continue to feed him on breast milk and other foods then I will be giving him the virus (HIV). Am giving him breast milk alone I know it is good for him.

This suggests that the respondents held a positive attitude towards exclusive feeding and believed in their ability to practise and were motivated by its benefits in the health of their infants to practise it. This suggests the need for emphasis on exclusive breast feeding for PMTCT by providing adequate information during counseling for its adoption and sustainability.

5.2.4 HIV in Breast Milk in Relation to Infant Feeding

Information from the in-depth interviews suggests that because the respondents were "aware of their HIV status" they said that mixed feeding was exposing their infants to HIV virus in the breast milk, which could lead to transmission of the virus to them. This implies that the respondents knew that through breastfeeding, MTCT of HIV could occur and that exclusive breast feeding could prevent it. In addition, 42.2% of the 100 respondents who reported they were uncomfortable with breast feeding immediately after birth which said they feared that through breastfeeding, they could infect their infants with HIV as shown in Table 5.1. Another, 30% of these respondents reported that they weaned because they were preventing HIV transmission to their infants (Table 5.3). They reported that they had been informed during the counselling sessions that weaning at about 4-6 months could prevent HIV transmission. The percentage of respondents who did not exclusively breast feed for fear of infecting their infant through breast feeding in the Zimbabwe study (Downs and Cooper, 2007) was relatively low compared to the current study. However, the reasons

for the difference cannot be established as multiple factors, including the type of counselling, the respondents' perceptions as well as other socio-cultural factors could have influenced the higher percentage of respondents who feared transmission to their infants in spite of the counseling that was done in both studies. This finding shows a knowledge gap on quality of counseling and socio-cultural perceptions in influencing infant feeding practices.

Other respondents in the in-depth interview feared they would transmit '*yamo*' (infections) to their infants through breast feeding because they said they were 'sick'. Similarly, a study conducted by Nwankwo and Brieger (2002) in Nigeria revealed, mothers felt that their bodies were already weak from inadequate nourishment due to poverty, and that exclusive breastfeeding would weaken them further. This may imply that in both studies, the women felt they could transmit infections, including the HIV virus to their infants because they were infected with the virus. Similarly, respondents were afraid to breast feed after being aware of the link between HIV transmission and breast milk (Downs and Cooper, 2007). The argument that for HIV positive respondents, breast feeding may be safer in some circumstances, was difficult for the respondents to grasp, and many still believed they risked infecting their infants through breast feeding. This suggests that the respondents through their social network, with health workers, received information on MTCT and apparently developed a perception that the risk of MTCT to their infants through breast feeding was greater than the benefits of breast feeding thus influencing them not to breast feed appropriately as recommended. This implies misconception from infant feeding counselling sessions that need to be adequately addressed with individuals during counselling.

Other respondents did not understand why at some point breast milk was safe for the baby while after 4-6 months from birth it could transmit HIV. The major reason for discomfort with breast feeding was the dangers of HIV transmission to their infants that the respondents associated with it. They explained that during ANC and maternity and in support group meetings they were counselled on MTCT through breast feeding. This suggests that the respondents were aware HIV could be transmitted to the infants through breast feeding. They also pointed out that there was general fear that their infants could get

HIV through breast feeding. They stated that they first heard this information from the nurse and the peer educators who re-emphasized the information. It also shows that weaning was also based on fear of its implications on the final HIV status of infant. Similarly, Fadnes *et al.*, (2009) in a study conducted in Uganda, points to the gap in the delicate balance between discussing MTCT through breast feeding and promotion of exclusive breast feeding during counseling which partly has both negative and positive influence on the choice of respondents on infant feeding practice. This was expressed by a discussant,

I fell sick for 4 weeks and feared that I could transmit “*yamo*” infections to my baby by breast feeding him because I have the virus.

This shows the respondent fear of HIV transmission to the infants played a role in influencing weaning due to inadequate counselling. Thus, the reasons for weaning at 4-6 months need to be communicated clearly so that mothers understand benefits of weaning and continued breastfeeding.

5.2.5 Link between Food Taken by the Respondents and Breast Milk Production

Production of breast milk is closely linked to food consumed by a woman. There is a misconception that adequate breast milk production is only possible when the respondents feed on animal protein. This was stated by a minority (6.66%) of the respondents who mentioned cost implications as a reason for their discomfort with breast feeding (Table 5.1). They reported that for them to produce sufficient breast milk to satisfy the baby, they must feed on ‘good food’ which they mentioned were animal protein that they highly valued as prestigious such as fish, eggs, meat and chicken; yet they are costly. The cost of these foods was cited as the cost implications of feeding the child on breast milk. The respondents in the current study did not also believe in their ability to sustainably provide these ‘good foods’ for themselves to feed on. This could mean that the respondents believed that foods from animal protein translate to sufficient breast milk. Similar to the findings, other studies show that breast feeding was demanding both physically on the mother’s body (Bentley *et al.*, 2005) and on the mother’s time Kakute *et al.*, 2005) such that they could not just sit down in order to exclusively breastfeed their infants without going to their fields to work. However, given the low socio-economic status of the

respondents coupled with the fact that most of the food they obtain is purchased, it could be challenging for the respondents to have enough food to eat to ensure adequate milk production, even when breast milk is not dependent on the types of foods as perceived by the respondents. Counseling on breast feeding should take into consideration the perceptions of the respondents concerned on the nutritional capacity of various foods and nutrition education should be included to increase awareness of the link between foods consumed and breast milk output.

5.2.6 Insufficiency of Breast Milk in Infant Feeding

Some 17.06% of the respondents reported that they weaned their infants because breast milk alone was insufficient to satisfy them (Table 5.3). Similar to this finding, studies showed that one of the most common reasons for early weaning is the mother's belief that she has an insufficient milk supply (Ochola, 2008; Fjeld *et al.*, 2008). Information from both the FGDs and in-depth interviews suggests that the respondents felt that breast milk does not adequately satisfy infants but did not stop breast feeding altogether due to the benefits of breast milk. At the same time, the infants were too old to feed on breast milk alone. They also reported that it is a norm that infants within 1 year of age must be breast-fed, an age at which breast milk alone cannot satisfy an infant and should only be stopped when the mother is pregnant with the next child. Moreover, the respondents reported that when an infant cried after breastfeeding or slept for a short time, then breast milk was inadequate to satisfy the infant. Similarly, a study conducted by Wilson *et al.*, (2006) revealed that breast milk alone gradually becomes insufficient to meet the nutritional needs of the growing infant especially in the second half of infancy leading to supplementation. Further research in Mazabuka of Southern Zambia by Fjeld *et al.* (2008) found that perception of mothers on inadequacy of breast milk as obstructions to EBF. The findings in both studies and the current one suggest that breast milk should be supplemented due to its inadequacy and for infants to have a deep and long sleep allowing those taking care of them to get ample time to do other household chores. This suggests that the respondents through their social network with community members received information that breast milk alone is insufficient for the development of an infant thereby influencing them to supplement breastfeeding.

This suggests that the respondents valued supplements to breast milk and also attached equal importance to breast milk. This made them practise mixed feeding. In addition, many respondents did not believe they had enough breast milk and that when infants are not weaned, they do not get satisfied with breast milk alone and grow weak. The low breast milk supply could be due to breastfeeding of infants for short periods (Akre, 1989). Feeding infants for a short time unfortunately, contribute to insufficient emptying of the breast, a process necessary to promote adequate breast milk production. These events could contribute to a phenomenon whereby perceived breast milk insufficiency contributes to physiological insufficiency and could explain respondents' perceptions that breast milk is not enough to satisfy their children (Akre, 1989). The health care workers/peers need to support the respondents to understand the capacity of breast milk to satisfy infants and importance of adequate supply of nutritious food that when eaten by the respondents ensure steady supply. The respondents should be aware of their bodies' ability to rebuild a failing milk supply by increasing the time they allow their babies to suckle at the breast and the types of food and to eat adequate supply of foods necessary for breast milk supply if exclusive breast feeding is to be achieved.

Another IDI respondent had this to say:

After some time, the baby is developing his bones and if you don't supplement breast milk, the baby will have weak bones. Babies have also developed the worms that grind food in the stomach and therefore need other foods to be added to breast milk.

This shows the knowledge gap among respondent on the ability of EBF to ensure healthy growth of infants forcing them to practise mixed feeding which is a risk to MTCT. This could be due to inadequate counseling coupled with a perception influenced by their network with the community where they were socialized to believe that exclusive feeding is inappropriate for growth and development of an infant.

Table 5.3 Reasons for Weaning Given by Respondents

The reason for weaning	Frequency	Percent
Norm of mixed feeding	9	5.29
BM insufficient/ cries a lot	29	17.06
Thirsty /aid digestion	11	6.47
Health care worker's instruction	8	4.71
Negative PCR result	8	4.71
Prevent transmission	51	30
Has /not yet reached weaning age	8	4.71
Sickness of baby or mother	3	1.76
Instructed by partner	1	0.59
Not applicable (formula feeding/exclusive breast feeding)	31	18.24
Gain weight	1	0.59
Other	4	2.35
Total	164	96.47
Missing System	6	3.53
Total	170	100

5.2.7 Value Respondents Attached to Water in Infant Feeding

Mixed feeding was reported by both the respondents who practised replacement feeding (21.1%) and those who practised breastfeeding (18.8%) (Table 4.8). However, mixed feeding of infants is discouraged for HIV positive respondents because it could irritate an infant's stomach lining and facilitate the entry of HIV from breast milk through the infants gut (USAID, 2004). Of the respondents who gave other foods to their infant on the first day they were born, a majority (83.3%) reported they practised mixed feeding (Table 4.8). This means that when respondents feed their infants on water on the first day they are born, then mixed feeding is likely to be practised. These respondents had various reasons for giving their infants water; they said that plain or glucose water gave their infants energy and sustained the infant before breast milk started to flow after delivery. Similarly, studies

conducted in Tanzania (Leshabari *et al.*, 2007) and in Ghana (Davis *et al.*, 2003) reported that water is customarily given to infants shortly after birth since it was believed that the infant were exhausted and thirsty and required water to quench their thirst. The current study further revealed that the respondents perceived their infants' stomach as being dirty and should therefore be cleaned by giving him/her boiled plain or salty water. IDI respondent commented, thus:

I give the baby water to clean his stomach so that the infant does not have stomach aches that normally disturbs babies

This respondent felt that water cleansed their infants' stomach of the greenish sticky stool that their infant passed during the first 1-3 days of birth to pave way for digestion; prevented constipation and reduced colic pains (stomachaches that infants experience during the first few months after birth). Others said water was given to the baby after every feed to aid in digestion and to soothe infants to sleep. This finding is similar to a study in Nigeria which reported that infants needed water after every feed (Onayande *et al.*, 2009). The misconception on the role of water in infant feeding should be addressed during counseling of the respondents if its use is to be discouraged.

A 30 year old married IDI respondent stated:

I give the baby water to add him water in his blood, so when he is sick, he does not need to be added for water (infusion fluids) when being treated.

Contrary to the current study, a study in China show that a mother does not initiate breastfeeding in the first two to three days since the colostrum is discarded, as it is perceived to be dirty (Bandyopadhyay, 2009). However, in both studies the child is introduced to warm water, other milk, and light porridge early to supplement breast milk. In the current study, these foods were given to the infant mainly because the respondents perceived themselves as not being able to produce milk or that the infants needed water for they are thirsty or for cleaning their gut, a perception that was influenced by their network with the community members.

The respondents further reported that giving water to infants protects them from dehydration especially when the infant fell sick and that their infants were thirsty just like

adults and therefore needed water to quench it. This could mean that the respondents felt that water aids in healing in case of sickness of an infant and promotes good health. Ideally, breast milk is adequate for an infant's growth (WHO, 2010) yet the respondents did not believe that exclusive breast feeding could provide adequate water for the infant. While other respondents, had to leave water as an alternative feed to breast milk for their babies when they had to leave the infants under the care of other people. This was because they felt that water could replace breast milk in that it was easily digested and therefore did not cause abrasion in the infants stomach leading to HIV transmission and could provide sufficient energy to sustain the infant for a short while. This could mean that the respondents felt water could replace breast milk occasionally and that it was not a pre-disposing factor to HIV transmission like other liquids and foods, and felt there was nothing wrong with supplementing breast milk with water. One IDI respondent commented:

I leave water to keep the infant when am away since I was told by doctor that I should not give my baby breasts (breast milk) and other food (mixed feeding). He said that mixing them will make the baby get the virus (HIV). You know water is just like breast milk even when doctor says that I should not give water to my baby.... I know it cannot disturb my baby.... It (water) will give him the energy when am away.

The IDI respondent believed water has health benefits, provides energy to the infant and that giving infants water is not tantamount to mixed feeding despite being counselled against it. This suggests that respondents do not believe in their ability to avoid feeding their infants on water due the socio-economic activities they are engaged in and that giving water is mixed feeding which could lead to MTCT. This could mean that either this was not sufficiently addressed during counseling to help them understand the sufficiency of breast milk or, in spite of such counselling, they did not believe the information. This could be due to the respondents' social network with community where, they learn that infants need water and they therefore develop a positive attitude towards it despite being counselled against it.

Other respondents reported that they introduced water to their infants during initiation of weaning as a transitional phase from exclusive breast feeding to introduction of weaning

food. This was to prepare the infants for the difficult life ahead, gradually moving from breast milk which was easy to digest to ‘hard’ thicker and difficult to digest foods like porridge. The respondents also said that when water is mixed with herbs and given to infants, it protects them from diseases such as ‘*orianyanja*’ (a condition characterized by passing of mucoid loose stool accompanied by a whitish coating on the tongue and around the anus) or ‘*mbaha*’ (general poor health of an infant which is characterized by the skin and the eye lids turning yellowish/pale), as well as use of a clean piece of cloth soaked in warm salty water to clean an infant’s tongue for protecting infants from oral thrush. This shows that the respondents attach a medicinal value to water. Another qualitative study from Botswana cited the use of supplemental herbal preparations for child growth as a primary reason for continued mixed feeding (Mompoti *et al.*, 2006). This made it difficult for respondents to stop feeding their infants on water despite having reported that they were counseled against it.

These findings are comparable to those of a study conducted in Mbale district, Eastern Uganda (Fadnes *et al.*, 2009) which indicated that pre-lacteal feeding was practised and was closely linked to perceived lack of milk and delayed initiation of breastfeeding. The reasons given included the ‘baby was crying’, ‘needed energy quickly’, ‘that the breast milk had not started flowing’, and that they had ‘pain’ and were exhausted. Additionally, this study revealed that pre-lacteals were given as a medication to clean the infants’ gut to enhance digestion and prevent stomachache (abdominal colic) in infants. The findings indicate that respondents do not comprehend that giving infants’ water is a pre-disposing factor to MTCT and therefore the need to intensify counseling to the respondents on its implications on MTCT.

5.2.8 Infant Feeding in Relation to Respondents’ Socio-Economic Activities

Information from the FGDs shows that respondents had a double role of engaging in income generating activities and other social roles, attending funerals, taking care of family members and household chores such as preparing family foods, fetching water and fuel. These activities took up the respondents’ time and energy, leaving them with little time to breast feed their children thereby influencing them to be more inclined to wean. Similarly,

Fadnes *et al.*, (2009) showed that giving supplements to breast milk was seen as a way to solve practical challenges so that the respondents could engage in other activities. This is supported Kakute *et al.*, (2005) that exclusive breastfeeding is demanding on the mothers time. The current study confirms that infant feeding is a time-consuming practise typical of the domestic arena and difficult to practise due to the economic activities that respondents are involved in. Maintaining successful infant feeding behaviour while fully engaging in employment can be very challenging. Some respondents had to attend to these activities away from home and had to leave their infants under the care of other people. One discussant said:

I have to leave for the baby something food when I go to look for money ...I am alone and I need to look for food for my other children. I leave porridge ...sometimes milk....

Furthermore, in a work or employment setting, it can be difficult for a woman to find time and privacy to breastfeed her infant, thus respondents rarely carried their infants to work. In such cases, they had to leave behind expressed breast milk for their infants to take, or leave behind other foods for them and only breast feed when they returned home from work, or stop breast feeding altogether. Additionally, the physiology of breastfeeding works on a demand and supply basis (Newman & Pittman, 2000). Abundant milk is generated because the baby suckles and empties the breast. When the breast remains full, the body will gradually adjust, producing less milk. Thus, the mother and the child need regular contact in order to maintain the supply of the mother's breast milk. Therefore, the amount of time that a mother ends up being separated from her child because of work can affect maintenance of appropriate infant feeding practices. This is confirmed by findings of this study: exclusive breastfeeding was highest among the unemployed respondents/housewives and those who had never left their infants with someone else, compared to those who were employed. Similar to the current finding, Nduati *et al.* (2001), found that respondents who exclusively breastfed were perceived as having time to be with their children (i.e., not having to go out to work) and were also perceived to have enough food to sustain lactation. The former group of respondents stayed home with their infants and therefore could afford to exclusively feed their infants.

However, the discussants in the FGDs in the current study reported that infant feeding was part and parcel of their daily activities. They stated that their infant feeding practice was independent of the economic activities they were involved in but it was based on their goal of ensuring that they do not transmit HIV to their infants. They asserted that feeding their infants was their responsibility just like any other activities and therefore it was within their daily activities and plans. This could be explained that the respondents in their social network with community internalized the value attached to child care and deep rooted perception that infant feeding is respondents' business, thus they were motivated to breast feed despite their engagement in other economic activities.

5.2.9 Respondents' View on Expressed Breast Milk in Infant Feeding

The respondents who opted to breastfeed their infants and were engaged in other social activities reported that they had to leave their infants under the care of other people. They however, disliked the idea of feeding infants on expressed breast milk. They said that instead, they had to leave alternative foods to breast milk for the infants. Information from the FGDs suggests that the discussants were disgusted by the thought of expressing breast milk for their infants. They felt that human beings cannot be milked like other animals and therefore could not leave it for their infants to take. Instead, they weaned them. Similarly, a study conducted by Njunga (2008) that the recommended infant feeding practises is socially and culturally irrelevant. Information from the FGDs further indicates that respondents were also concerned that expressed breast milk was unsafe and unfit for an infant's consumption because the breast milk is exposed from its natural habitat 'the breast'. These respondents would rather carry along their infants wherever they went than to express breast milk thereby either exclusively breast feeding or leaving behind alternative foods for their infants. The respondents having been breast fed directly from the breast as infants or having fed their other children in the same way, had therefore established it as the social norm for themselves as individuals and their households rather than expressing breast milk which was new to them. Similarly, Meyerink and Marquis (2002) found that mothers are more likely to feed their infants in the same manner in which they themselves were fed. A discussant said:

Breast milk when expressed will go bad and will be stale for the baby and will lead to diarrhea.

The discussants show that expressed breast milk is unsafe for infant feeding. This could be due to ideas they received from their social network with the community members that the concept is alien and is against the norm. Comparable to a study conducted in Homa Bay (Oguta *et al.*, 2004), the idea of expressing and/or heating breast milk was alien and unacceptable to mothers in this study. Ideas about it included; it is not normal to milk a human being; breast milk cannot be expressed to produce enough milk to satisfy the baby; and milking would make the breasts painful. However, other discussants in the FGD said that expressed breast milk was safe and convenient for a woman who was exclusively breast feeding. These respondents asserted that breast milk has many beneficial effects and were comfortable to leave expressed breast milk while they were to be away from the infant. In relation to the finding, a study conducted by Awumbila (2003) revealed that breast feeding is a socially and culturally entrenched practice, therefore, given that expressed breast milk is a relatively new concept and a deviation from the norm coupled with the fact that a number of respondents are engaged in social activities outside home, it could be a more practical method for PMTCT through breast feeding since it does not require additional resources apart from breast milk therefore there is need to explore strategies for its effective implementation. Peer supporters who had prior experience with feeding infants on expressed breast could support respondents to internalize and practice it as reported in the FGDs that the peer educators shared with the respondents their personal experiences on infant feeding and their potential outcome.

5.2.10 Disclosure of Respondents' HIV Status and Male Partner Involvement

This study explored if the respondents disclosed their HIV status to the infant care givers as a strategy for implementation of PMTCT regulations. Twenty four percent (39) of 130 respondents who responded to this question reported that the care givers of their infants knew the HIV status of the respondents. The care givers the respondents disclosed their HIV status to varied and included 32 male partners, 2 in-laws (a sister in law and a mother in-law), 1 friend, and 2 hired care givers. This shows that respondents rarely disclosed their HIV status to the care givers of their infants and respondents who disclosed their status was

mainly to their male partners. However, male partners who had disclosed their HIV positive status to their last sexual partner (KAIS, 2012) was higher (65%) than the current study. Yet, bland et al. (2006) showed that women are supposed to discuss the infant feeding options with their partners and to come up with a joint fully informed decision on how to feed their infants to enhance adherence. This shows the gap in partner involvement in infant feeding process among the respondents. It also, emerged in the in-depth interviews that informants mistrusted their care givers with any intimate information, thus they only explained how the baby was fed but did not disclose why the baby should be fed that way. Some of these respondents feared their care givers would desert them on realizing that they are HIV positive lest they contract HIV from the infants or that they would disclose the status of the respondents to other community members or neighbors. This could mean that because HIV is stigmatized, the infant care givers are perceived to be uncomfortable to be associated with families infected with HIV. Other respondents mentioned that they were comfortable with the hired care givers because they are employed to take care of the infants and they could be easily manipulated to feed the infants as they are instructed as opposed to relatives who are not paid to take care of the baby. The respondents said the relatives would question why the infants have to be fed differently from the norm of mixed feeding. This shows the level of stigma the respondents had to under go at the family level due to their HIV positive status, a condition that the community associates with promiscuity.

The low level (24%) of HIV status disclosure reported by the respondents to the care givers of their infants is similar to disclosure in a Thai study by Talawat *et al.*, (2002). In that study, only 27% of the respondents said they were HIV positive when asked by their community members why they were not breastfeeding. This could mean that the respondents did not discuss infant feeding exhaustively based on their HIV status. They also did not discuss its implications on the infants to enhance adherence to the woman's infant feeding method of choice for fear of stigmatization. Although the risk is minimal, the infant care givers may be at risk of getting HIV infection from the infants when they are not aware of the risks involved in taking care of them. The role of care givers in HIV prevention through infant feeding has been under estimated apart from the disclosure of a mother's HIV status to them. The current study show that the care givers could support an

important component of PMTCT in infant feeding by feeding the infants appropriately based on an informed point of view.

The findings of the current study also show that only 19% (32/158) of the respondents had disclosed their HIV status to their male partners. They said that it was easy for them to disclose their HIV status to their partners only after knowing their partner's status or when they are tested together. Furthermore, findings indicate that discussion on safe infant feeding with a male partner was highest among the women who knew the HIV status of their male partners. A majority (95.9%) of women who knew the HIV status of their partners had discussed safe infant feeding with them. Only 31% of the women who did not know the HIV status of their partners discussed it. They indicated that their male partners fully supported them and ensured that they exclusively breast fed for 3 months. Similarly, women's breastfeeding decisions have been shown to be influenced by their perception of partner's attitudes (Arora *et al.*, 2000). The respondents whose infants were on replacement feeds and had disclosed their HIV status to their male partners reported that their male partners supplied replacements to breast milk and encouraged them not to breast feed.

Information from the FGDs and the in-depth interviews showed that for some respondents, the male partner dominated initiation of discussions and decision making processes at family level. The respondents said they had no or little say on matters pertaining to family and feared initiating such discussion for fear of unpredictable consequences. This was partly because they feared their husbands would think they had brought the 'disease' (HIV) or they feared the reactions of their partners. They said given that they did not disclose their HIV status to their partners, they did not discuss infant feeding based on their HIV status. However, they expressed that it was important to discuss it with their male partners to gain their support. This finding is similar to that of the Homa Bay study (Oguta *et al.*, 2004), which indicated a strong relationship between mode of infant feeding and spouse's awareness of HIV status. Others said that given the domineering nature of men, they did not question what their male partners had insisted on, such as feeding their infants on 'heavy' thick foods like porridge (practice mixed feeding) to make them grow fast even when the respondents were aware it is a risk to HIV transmission. Other studies indicate the

importance of partner support in determining feeding behaviour (chopra *et al.*, 2005; Kiarie *et al.*, 2004). This perception fits in the theory of PB/RA since the respondents felt they were not in control of infant feeding therefore practiced mixed feeding since they believed that close relations would approve it even if they held a negative attitude towards it. Other respondents said that their male partners were not concerned about how the infants were fed because the partners believed that child nurturing is a woman's business. This suggests that although partner knowledge of HIV status is a factor influencing infant feeding decisions, a supportive partner attitude may be more important.

An interesting finding in this study is that disclosure to a male partner is an important component for adherence to safe infant feeding. This is because even the respondents who felt they were in control of feeding their infants on breast milk since they had the breast milk and had not discussed with their partners, had to come up with coping mechanisms to exclusively breast feed. This was not sustainable. Additionally, the respondents who fed their infants on replacements to breast milk and were in polygamous marriages said their feeding choice was not influenced by their male partner's decision. This was because their partners were not at home most of the time. They asserted that they could sustain it without the support of their partner and expressed that they feared discussing their infant feeding method of choice with their partners because the 'information' (that they are HIV positive) could leak to their co-wives leading to discrimination and stigma by them. This finding is similar to a study conducted in Zimbabwe where HIV infected mothers in a PMTCT program who disclosed their status to their partners were able to fully participate in interventions to reduce MTCT including early cessation (Marangwanda *et al.*, 2004).

However, the role of the male partner in infant feeding should be addressed cautiously. A study in rural Malawi (Njunga, 2008) showed that respondents reported that their spouses abandoned them after disclosing their HIV positive status; accusing their wives of infidelity. Similarly, the findings in this study indicate that some respondents reported that their husbands violently reacted on knowing the status of their spouses: they were abused, discriminated and some were even sent away from their matrimonial homes. These respondents feared even telling their own parents for fear that they would be assumed to

have ‘brought the disease’ to their families. This makes some respondents suffer psychological and economic problems and hinders them from practicing their infant feeding method of choice. Due to this, economic support of their male partners is important without which it would be difficult to provide supplementary food for their infants. It is therefore important to explore with the woman her individual situation on the possibility to disclose her HIV positive status to her close associates especially, the male partner and its implications beforehand. The counseling on disclosure of HIV status by the respondents will need to take into account these different levels of stigma and the implications thereof as the respondents navigate the disclosure process, choice and implementation of appropriate weaning process. A FGD discussant,

It is a good idea to discuss with him (husband) but you need to understand the type of person you have before you talk with him what you want for your baby. I will not tell a mother to inform (disclose her status) her husband because I was chased away when I told him the way I am. Now I stay with my parents but I have not told them (my HIV status).

This finding show, that respondents are cautious to disclose their HIV positive status due to the actual and perceived fear that could result from the discussion and feels they would rather not disclose and not adhere to the recommended infant feeding practices. This points to the gap on partner involvement from the intial stages of pregnancy to enhance disclosure and adherence to safe infant feeding.

5.2.11 Self and External Stigma in Infant Feeding

This study explored the experiences of the respondents who practiced giving replacements to breast milk to their infants immediately after birth. The respondents discussed the discomfort they experienced by feeding their infants on replacements. This was noted where fear /stigma associated with the use of replacements to breast milk were mentioned by 31.71% of the respondents who were on replacement feeding (Table 5.2). Stigma reinforces existing prejudices in society. It further marginalizes the already marginalized, for example, the respondents, the poor and HIV infected. Stigma is viewed as something that critically constrains the process of incorporation of HIV into one’s identity (Baumgartner and David, 2009). HIV is stigmatized because it is a potentially life-threatening disease and is believed to result from moral weakness, such as promiscuity

(Turan *et al.* 2011). The respondents reported that the community believes that all infants must be breast fed without which an infant cannot develop normally. They said that community members attribute all kinds of reasons for a deviation from the norm of mixed feeding is suspected to be HIV positive. This is because these are new practices in Kenya. They reported that the use of replacement feeds was associated with a HIV positive status such that not breast feeding meant that a woman was HIV positive, and “no one wants others to know their HIV status”. Similarly, de Paoli *et al.* (2002) revealed that in countries where breastfeeding is the norm, formula feeding was known to alert a woman’s family to the fact that she is HIV-positive, that may result in her being abused or shunned. Findings of both studies show that, fear of disclosure may be an impediment to choosing formula feeding and exclusive breast feeding and the respondents practicing replacement feeding face huge social disapproval due to the strong belief on the benefits of breastfeeding for the healthy growth of infant.

Self-stigmatization emerged in the in-depth interviews where respondents reported that they felt they were bad mothers to their infants for not providing ‘what they have’ which was breast milk. The respondents feared that they would be stigmatized if they deviated from the norm by not breast feeding. They also felt they owed the community an explanation for not breast feeding. In this study, the respondents often felt compelled to hide the fact that they formula fed over fear of stigma. Similarly, a study by Njunga (2008) and Turban *et al.* (2011) showed that a deviation from the norm of breast feeding among women has many implications including extreme consequences such as violence and divorce. For HIV positive respondents to exclusively breastfeed their infants to 4-6 months, they must have a strong will and determination so that they are able to withstand community pressure to mixed feed. Exclusive breastfeeding is already associated with HIV and many respondents fearing exposure that they are HIV positive, practise mixed feed their babies even before four months thus increasing the risk of HIV infection.

This was demonstrated when some of the respondents said that they exclusively breastfed their babies and had to find excuses to tell people when they asked. Other respondents failed to exclusively breastfeeding because they did not know what to tell people

concerning why they were not mixed feeding and at the same time feared being stigmatized. A FGD discussant had this to say,

People always know that a young child must breast feed. So when my child cries obviously people will tell me to breast feed to appease the child.

They also reported that at the community level where they lived, information is that mixed feeding, giving infants water is the norm and, exclusive breast feeding and replacement feeding is unheard of. This suggests that the network of the respondents with their kin in the current study, put pressure on them to breastfeed due to belief in the value of breast feeding for every infant as also observed by Leshabari *et al.* (2007), or due social stigma of associating formula feeding with HIV (Kebaabetswe, 2007; Becquet *et al.*, 2006) that was experienced by respondents who were formula feeding. In addition, a study by Nduati *et al.*, (2001) indicate that the respondents who exclusively breastfed were stigmatized since it was associated by positive HIV status. It is plausible that this dimension may be more common where there is widespread awareness of infant feeding recommendations for HIV positive respondents. The other studies may reflect communities that put most value on breast feeding. This suggests that strategies that could be used by respondents to maintain confidentiality regarding their HIV-positive status could influence them to practice mixed feeding.

5.2.12 Community Involvement in Infant Feeding Practices

The role of the community in infant feeding emerged during the FGDs. Discussants reported that respondents who had older children were expected by the community to guide the younger respondents who had younger children or were having children for the first time on how to feed their infants. They said that this was to ensure continuity of the community since the infants belonged to the community and not to an individual family. The respondents reported that they were guided by the older members in the community to wean at as early as one month since mixed feeding was the norm and to prolong breast feeding until they were pregnant with their next child. Similarly, a study conducted by Aubel (2006) showed the influence of grandmothers on infant feeding given their role as information providers. The current studies further show, other respondents said that their sisters-in-law, mothers and/or mothers-in-law supported them to exclusively breast feed

their infants as they had been counseled. Similarly, Fjeld et al. (2008) found conventional family expectations as obstructions to EBF since it was culturally acceptable that family members support infant feeding and rearing. However, other respondents indicated that the extended family were not responsible for determining how their infants were brought up or weaned but their practice was based on their own individual family/mothers' decision although they concurred that the infants belonged to the community and not to an individual family. The findings in this study suggest that there were both positive and negative influences from community members on weaning practices. This could mean that the elderly family members influenced the weaning practices, taking into account the fact that child care is an instruction passed from generation to generation, preserving customs and inserting new beliefs and values.

However, the role of social stigma in affecting respondents' decisions on infant feeding cannot be under-estimated. This appears to be particularly acute for respondents who had their first experience with a new born or those depending on their parents/guardian for support. According to a study in Gaborone, Botswana (Mompoti *et al.*, 2006) and a study by Maru and Haider (2009), it was commonly noted that women received advice from their families to practise mixed feeding, thereby yielding to social pressure from a community in which individuals, families and neighbours freely intervened in each other's child rearing activities. Similarly, the findings in this study indicate that women feared being stigmatized for not feeding their infants as instructed by the older women or their parents/guardians who could perceive them as disrespectful. They reported that they would rather practise mixed feeding which was accepted in the community with the hope that HIV transmission could not occur to their infants than defy the instruction of the older respondents or their parents/guardians. Leshabari *et al.* (2007) further showed that, these guidelines may not be immediately appropriate in certain settings unless they are adapted to the social and cultural context of the women who make the choices. Additionally, Turan *et al.* (2011) showed that strong cultural pressures to mixed feed within the first month of birth causes HIV positive women, who are encouraged to exclusively breastfeed within 4-6 months in attempt to limit child exposure to the virus, to unintentionally disclose their HIV status to the community. This was partly because these respondents had not disclosed their HIV status.

Young mothers depend on older mothers to teach them how to feed their children. Frequently, however, these older respondents have inaccurate information thus the respondents risk MTCT to their infants through mixed feeding.

5.2.13 Role of Health Care Workers in Infant Feeding

Health care workers play a critical role in infant feeding as expressed by respondents in the FGDs. Negative attitudes and lack of knowledge on the part of healthcare providers can be barriers to successful infant feeding practices (Black *et al.*, 1990). Respondents stated that they first heard the information on safe infant feeding from the nurse and the peer educators at the clinic (Table 5.3). The FGD discussants further reported that the respondents exhaustively discussed breast feeding as an infant feeding option with the nurse. Additionally, they said that they received counseling that breast milk was the most appropriate feeding method for their infants while counseling on replacement feeding was quite limited. The nurses created an impression that replacement feeding was not feasible, unaffordable and not sustainable without considering the individual respondents' situation. This could mean that the respondents were not given an opportunity to make an informed decision.

In contrast to the reports of the respondents who participated in the current study, a PMTCT programme in a South Africa study by Chopra *et al.*, (2005) where exclusively breast-feeding mothers recalled that the health worker allowed them to make their own choice, taking into consideration home circumstances and practical constraints of the two feeding options. Additionally, hospital policies and practices may also affect infant feeding practices, with regard to the initiation and duration of breast feeding, and the use of replacement feeding. The short hospital stay by respondents and the busy schedule of staff make it difficult for even well trained staff to provide the necessary education and support for infant feeding. The role of the healthcare professional can be very critical in providing respondents with the information they need to make decision on feeding their infants. The South African study cited above supports the possibility of promoting exclusive breastfeeding in a context where the respondents are allowed to choose a preferable recommended option. Lessons on the counseling practice in the South African context

could inform enhancement of promoting the free choice to exclusively breastfeed through counseling by healthcare workers. However, it would also be necessary to understand the social context of the participants in the South African study, as compared to the context of this study in Western Kenya.

5.2.14 Role of Peer Supporters in Infant Feeding

In the current study, the in-depth interviews and FGDs highlighted the role of peer educators in helping the respondents to internalize standards, norms and values of safe infant feeding. The peer educators/counselors are experienced nursing mothers who are HIV positive providing support on infant feeding to the respondents. They were respondents from a similar social situation who supported the respondents on a peer rather than professional basis. The respondents said they trusted the information on infant feeding from the peer educators because they were more open and known to have had firsthand experience compared to the nurses. The respondents felt their practice was influenced more by other respondents in their support groups. According to Maru and Haider (2009), when breastfeeding and/or formula feeding have not been the traditional way of infant feeding, initiation of the practice can meet opposition from partners and extended family members. The respondents said that the peer educators shared with them their personal experiences on infant feeding, infant feeding regulations, coping mechanisms and the effects of these practices on the HIV status of their infants. It is clear from the discussion that the respondents felt more comfortable with the peer educators with whom they freely discussed their issues than they were with the nurses. This shows the interactions (social networks) the respondents had with their peers and the confidence they have in them. It points to the potential of addressing negative individual perceptions that prevent the practice of recommended infant feeding methods among respondents who are HIV positive through peer educators.

5.2.15 Summary

Social, psychosocial, physical and economic factors contribute significantly to the shaping of infant feeding practices. The findings of the current study show that the specific respondent's personal value, experience, knowledge and perception that were linked to the society and culture influenced their weaning practises. This takes into account respondents'

attitude towards breastfeeding or replacement feeding, her awareness of the nutritional value of breast milk, previous experience with breastfeeding, perceived pleasure/difficulty to sustain breastfeeding, and her aim in preventing diseases in infants. The respondents were influenced more by their individual perception of the effect of their practice on their own health and those of their infants and in their ability to practise it.

The perception was guided by the social network which includes the male partner, friends and other family members and infant care giver who influenced her perception that exclusive breast feeding and formula feeding is unacceptable and is inadequate/insufficient for healthy development of an infant, while mixed feeding is the norm thereby discouraging them from practising formulae feeding and exclusive breast feeding. While the peer educators and health care workers supported the respondents to prevent MTCT through breast milk which conflicted with the norm of mixed feeding, belief that infants need water, breast milk or formulae feed is adequate for development of the infant. These conflicting schools of thought from various networks influenced the perception of the respondents and belief in their ability to practise them resulting into varied infant feeding practises among the respondents.

CHAPTER SIX

THE PERCEPTION OF THE HIV POSITIVE WOMEN TOWARDS INFANT FEEDING GUIDELINES

6.1 Introduction

This chapter discusses the perception of the respondents towards the infant feeding guidelines in PMTCT. This includes the respondents' perception on exclusive breast feeding for 4-6 months from birth and exclusive replacement feeding for 4-6 months and the reasons for their perception. Perception was determined using a five point interval scale and ranked in their order of preference by the participants.

6.2. Respondents' Perception of Exclusive Breast Feeding.

Some of the respondents (45.6%) strongly agreed and 20.9 percent agreed (Table 6.1) to the regulation of feeding an infant born to a HIV positive woman exclusively on breast milk for 4-6 months. This indicates that most of the respondents value exclusive breast feeding for 6 months for their infants. This could be due to infant feeding counseling the respondents received and the acceptance of breast feeding as a norm. The perceived multiple benefits of breast milk learnt during counseling and reinforced by peer counselors influenced respondents' decision to breast feed their infants, and was reflected in reasons given for doing so. This was reinforced, for some respondents, by past experience which confirmed their belief in the health benefits of breast milk. Furthermore, breastfeeding was the norm in the respondents' context as reflected in earlier sections of the results of this study. The respondents argued that breast milk adequately provided all the nutrients the infant needed for the first 6 months of life. With breast feeding, the respondents were certain that their infants would receive nutrients necessary for growth and development. This study also found that some respondents regarded the policy of exclusive breastfeeding as a practice guideline. This means that the policy supports the traditional understanding of the nutritional value of breast milk to the baby. This could mean that since breast feeding is the norm, it is acceptable making it easy to practice. According to WHO (2010), breast feeding is regarded as the best way to feed infants.

Table 6.1 Respondents' Perception of Feeding an HIV Exposed Infant on Breast Milk Alone for 4-6 Months from Birth.

Opinion of respondents	Frequency	Percentage
Strongly agree	72	45.6
Agree	33	20.9
Neutral	16	10.1
Disagree	27	17.1
Strongly disagree	2	1.3
Missing	8	5.1
Total	158	100.0

There were those who agreed to exclusive breastfeeding for 4-6 months because it was available at no cost making it sustainable for the common man. The monthly family income in this region is low and families have large number of household members that they can barely support, as reflected in the participant characteristics. The respondents found exclusive breast feeding a more feasible and convenient method to practise than replacements that required preparation, clean water supply and fuel. Laar and Govender (2011) indicates that peer support group for HIV-positive respondents, or support from health workers/peer, could enable mothers to express and treat their milk. The respondents also stated that they were counseled by health care workers/peer educators that exclusive breast feeding prevented HIV transmission and that mixed feeding could cause abrasion on the infant's stomach which could lead to HIV transmission. Similar to findings in the current study, a study done in Uganda (Fadnes *et al.*, 2009) indicated that the respondents were made aware of the link between HIV transmission and breast milk and were counseled on how to prevent transmission of HIV virus to their infants. The respondents further explained that they were left with the option of exclusively breast feeding since formulae feeds were too costly for them to afford. A 21 year old IDI participant commented:

I don't bother with NAN and others when there is a ready to drink breast milk that God gives free.

The infant and young child feeding policy states that at 4-6 months of age, HEIs should be weaned (WHO, 2010). The respondents argued that stopping to breast feed their infants at 4-6 months was easy because the infants were too young hence not clever enough to recognize any change in their feeding pattern. They reported that due to their young age of 4-6 months, infants can adjust more easily when weaned than when they are older, when they could realize the change as a result of weaning and rebel. In the focus group discussions, the respondents indicated that at 4 months and above the infants were old enough to feed on other foods because they were able to swallow and digest other foods. At that age, the digestive system of the infant can comfortably accommodate other foods thus does not risk the health of the infant. After 4 months from birth, the respondents said, breast milk gradually reduces therefore becoming insufficient for the infant and at the same time, the infant's milk intake gradually increases making weaning appropriate. However, a study in Botswana (Siedel, 2004) and in Cote d'Ivoire (Becquet *et al.*, 2006) indicated that supplementation by 6 and 2 weeks respectively was common since mixed feeding was the norm suggesting that in the current study the information on weaning at 4-6 was reinforced by counseling the peer educators conducted.

The current study found that the respondents were aware of the benefits of exclusive feeding and the risks associated with mixed feeding and could have been compelled to practise mixed feed because of prevailing circumstances. The respondents reported that there were various reasons that made them not to exclusively breast feed. They felt that it was difficult to exclusively breast feed an infant for 4-6 months due to the following reasons: the respondents are used to mixed feeding, water is important in infant feeding, breast milk was insufficient because their infants are heavy feeders or they produce little breast milk. They felt that breast milk is insufficient and infants are not satisfied. Similarly, the prevalence of mixed feeding in PMTCT programmes is reported at 21-43% (Kiarie *et al.*, 2004) meaning that the respondents perceived exclusive breast feeding to be insufficient for the growth and development of an infant and learnt in their network that mixed feeding is the norm. An IDI participant said:

When you study your baby when breast feeding and you see that he is not satisfied ... he cries a lot even after giving him breasts.

This shows that the respondents were highly motivated by their own attitudes about exclusive breast feeding and believed their community members would approve of the practice. However, they could not actually practise it due to intervening environmental conditions and their perceived behavioural control. For these respondents, the infant feeding practices were influenced by their perception that exclusive breastfeeding was difficult for them to practice. Similarly, a study by Lewis (2007) suggests that nutritional and psychosocial support is particularly important for the HIV infected nursing mothers because HIV puts an additional strain on her energy and nutrient stores and may affect her attitude.

For successful exclusive breastfeeding, psycho-social support should therefore be boosted during post natal clinic visits to enhance the respondents' perception of their ability to practice it until 4-6 months. Booster psychosocial support sessions could create environmental conditions suitable for the respondents to continue breast feeding and motivate them even further on their attitudes about breastfeeding; and, not only create a sense of community approval but also foster their perceived behavioural control of exclusively breastfeeding until 4-6 months.

6.3 Respondents' Perception of Replacements to Breast Milk

When asked about their perception on the guideline of feeding an infant born to an HIV positive mother on replacements to breast milk for 4-6 months from birth, minority (19 percent) of the respondent strongly agreed (Table 6.2). The respondents indicated that it was the surest way of preventing HIV transmission even though they had their reservations. They said that their babies have grown well with it. In the FGD, the respondents expressed that cow milk was better compared to 'Nan' formula feed. The study found that respondents were used to cow milk being fed to infants making it more acceptable to them than 'Nan' which was new to them. The respondents argued that 'Nan' is only approved when the mother dies or is away. Yet, 'Nan' is formulated to the standard nutritional requirements of an infant unlike cow milk that has to be modified based on the infant's age (USAID, 2004). Additionally, the respondents cited that stopping breast milk at once was difficult for both the mother and infant to practice and therefore preferred replacements to

breast milk. This could mean that these respondents believed it was the surest method of preventing HIV transmission, cow milk is more acceptable than infant formulae, breastfeeding had chances of HIV transmission and since abrupt weaning was difficult to execute.

An IDI respondent confirmed,

I am just forced to do it (feed an infant on cow's milk) because I have the virus (HIV).

This indicates that the prevailing reason for respondents to practise replacement feeding was the fear of exposing their infants to the virus from breast milk; otherwise it would not be practiced. Replacement feeding provides an opportunity (perceived behavioural control) for the respondents to prevent MTCT of HIV to their infants.

Table 6.2 Respondents' Perception of Feeding an HIV Exposed Infant on Replacements to Breast Milk without Giving Breast Milk for the First 4-6 Months from Birth.

Opinion on replacements		
to breast milk	Frequency	Percentage
Strongly agree	30	19.0
Agree	34	21.5
Neutral	11	7.0
Disagree	61	38.6
Strongly disagree	12	7.6
Missing	10	6.3
Total	158	100.0

Some (38.6%) of respondents disagreed with the recommendation to feed an infant on replacements to breast milk. The respondents indicated that they could not afford and sustainably provide replacements to breast milk in sufficient quantity for 4-6 months from birth. This finding agrees with a study in Cameroon on the choice of infant feeding among HIV positive respondents (Muko *et al.*, 2004) who asserted that the most common factor affecting caregivers' choice of replacement feeding was cost, as they found that 69% of the

respondents could not afford replacement food. The infant feeding policy states that feeding infants on replacements is only appropriate if it meets the AFASS conditions (WHO, 2010). According to UNICEF (2011), mothers practice exclusive breastfeeding because they cannot afford the alternative feeding options. The economic burden of formula feeding on the respondents as well as their families could be high due to the price of buying formula milk. The cost of formula is prohibitive for many respondents due to unemployment or limited financial resources due to high poverty levels in this region coupled with erratic water supply in Kisumu. Thairu *et al.* (2007), in a similar study in Rwanda, agreed with these findings by asserting that while 81% of HIV positive mothers chose to breast feed their infants, 53% of these mothers justified their choice that they lacked financial means to make other choices. The socio-economic status of most of the respondents in the current study would render it difficult to sustain this recommended option even where respondents may be convinced that it would reduce the risk of transmission of the virus to their infants. Many respondents live in areas where clean water for mixing formula is either unavailable or obtained with great difficulty or the water sources such as communal taps or boreholes have contaminated water yet the infant food must be safe and sustainable.

In the current study, the FGD discussants gave various reasons for disagreeing with replacement feeding that included the inability of the replacements to breast milk to satisfy and to protect infants from diseases and, to ensure a healthy physical and psychological development of an infant compared to breast milk. Other respondents reported the difficulty in preparing them which include boiling water to the right temperature, use of sterilized utensils and mixing the feed with water in the right ratio. This was compared to breast milk which was otherwise ready to drink. This shows that the respondents believed replacements do not contain adequate nutrients for the normal development of the infants. They even thought it would cause diseases.

Additionally, other respondents said that replacements to breast milk had chemicals that were harmful, because it was processed therefore a lot of nutrients were destroyed making it impotent or, it acquired chemicals that were harmful during processing. Other

respondents reported they never tested its efficacy and did not bother to try it. Similar to the current study, provision of free formula in some PMTCT programmes resulted in increased rates of mixed feeding (Nduati *et al.*, 2001) meaning that the respondents doubted its capacity to replace breast milk. Emphasis on the nutritional capacity of replacements seemed inadequate during the infant feeding counseling process. Furthermore, the social network that the respondents were engaged in could have provided misinformation on replacements thereby discouraging respondents from practicing it. This is expressed by an IDI breast feeding woman thus:

Infants need foods that can protect them from diseases as they grow which foods like 'Nan' do not have. Breast milk is sweet, has everything (nutrients) for the good growth of the baby. Also, those (Nan) milk gives him/her '*orinyanja*' disease.

The role of social networks is further reflected in the reports of stigmatization of use of infant formulas. The respondents reported that those who feed their infants on tinned milk and those not breast feeding were stigmatized. They elaborated that such respondents were considered irresponsible and behaved like foster mothers who did not care about their infants' welfare. This shows that exclusive replacement feeding was socially unacceptable, perceived as a threat to infant survival, and was sanctionable. This indicates that the women felt that their close associates (subjective norms) would not approve of it even though the respondents could have had an intention of practicing it. Comprehensive counseling and psycho-social support on infant feeding would enhance positive attitude and sustainability of the opportunities available towards enhancing its practice.

6.4 Summary

The perception of the respondents on infant feeding regulations for HIV positive respondents was based on prevention of MTCT of HIV, the nutritional capacity, the acceptability of the subjective norms, and the practicality (the ability of the respondents to practice) of the method in question. This could be due to infant feeding counseling that the respondents received and the acceptance of breast feeding as a norm. The perceived multiple benefits of breast milk, learnt in their network during counseling and reinforced by peer counsellors influenced respondents' decision to breast feed their infants, and was reflected in reasons given for doing so. This was further reinforced, for some respondents,

by past experience and their network with the community which confirmed their belief in the health benefits of breast milk.

In the current study, the respondents had agreed to the policy of exclusive breastfeeding among the HIV positive respondents. This was based on the perceived ability to prevent MTCT, its nutritional value to ensure healthy growth of infants; breast feeding is a norm and; is available at no cost. However, only about half of them practised it expressing challenges with its implementation which included mixed feeding is the norm, water is important in infant feeding, breast milk was insufficient because their infants are heavy feeders or they produce little breast milk therefore the infants are not satisfied. This suggests that the perceptions of the respondents were based on her social network that informed her of MTCT, norm of mixed feeding, insufficiency of breast milk and also her attitude on the benefits of breast milk on the health of the baby. Exclusive breastfeeding has been found to be possible if there are support interventions thus the current study therefore suggests that given the positive attitude on breast feeding, strategies to increase support to the respondents could enhance its implementation.

The respondents disagreed with practicing replacement feeding yet it is one of the recommended infant feeding methods for preventing MTCT. The concerns the respondents raised were influenced by their perception resulting from their network and the reasons included cost, nutritional capacity to satisfy and to protect infants from diseases and, its capacity to ensure a healthy physical and psychological development of an infant, compared to breast milk. They considered breast milk affordable and sustainable in comparison, thus few respondents practiced replacement feeding.

This study follows to the theory of reasoned action and theory of planned behaviour, where the attitude of the respondents and their subjective norm on exclusive breast feeding for 4-6 months and they held a positive attitude on their ability (the perceived control) to exclusively breast feed for 4-6 months, which is reflected in their intention to practise it. However, the practise of exclusive breast feeding was sub-optimal. The respondents did not form a strong intention to practise replacement feeding because they believed that they did

not have the resources or opportunities to do so and held unfavourable attitude towards it despite their network with health care worker despite being counseled. The study suggest strategies involving various networks of the respondents and intensified and continous counseling to the individual respondents to enhance implementation of exclusive breast feeding since it was perceived as feasible and affordable.

CHAPTER SEVEN

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

This chapter presents the summary of the main study findings and conclusions drawn from its findings. The chapter culminates in recommendations for utilization by the policy makers and PMTCT program implementers and suggestions for further research.

7.2 Summary

The purpose of this study was to identify the infant feeding practices, the socio-cultural factors that influence the practices and the perception of respondents on the infant feeding guidelines, attending post-natal clinic in Kisumu East sub-County hospital in Western Kenya. The respondents were mainly resource-poor with most having incomes below the poverty line; mainly housewives or in informal employment; mainly married and were attending a post-natal follow-up clinic hence being part of a network at the family level and to health care workers.

The study identified various infant weaning practices among the participants. The analysis shows that breast feeding was the norm at birth, while replacement and other foods were rarely practiced at birth. This finding suggests that in resource poor settings, the avoidance of breast feeding was unlikely to be acceptable, feasible, affordable, sustainable or safe, and that breastfeeding would remain the most appropriate choice for most respondents. This suggests that social network of the respondents with the community informed them that breast feeding is the norm and beneficial to the infants' health which was further reinforced by the health care workers during counseling hence its practice at birth. The findings of this study further reveal that exclusive breast feeding and weaning at 4-6 months was common and when weaning is initiated early, mixed feeding was likely to be practiced and the vice versa. This reflects on the perception of the respondents that when infants grow older, they are able to feed on weaning foods enabling them to wean which is an indication that in their network with health care workers, they understood the concept of exclusive feeding and dangers of mixed feeding due to the counseling they received.

However, the practice of recommended infant feeding practices was low, thus the need for adequate and continuous counseling and support to the women for PMTCT to be realised.

The socio-cultural factors identified among the respondents to determine weaning practices were varied. These factors were influenced by the perception of the respondents towards benefits and ability of the method to enhance the growth and development of the infant and prevent MTCT. The perception of the respondents was, on the other hand influenced by their networks with the family members, peer supporters and health care workers. The factors identified to influence successful breast feeding were; it is a norm, infants must be breast fed, it enables proper growth of an infant, being house wives/ unemployed thus available to breast feed. Also, information and support from peers, health care workers and family members on the nutritional value of breast milk, PMTCT and their support was identified. The perception of the respondents to exclusively breast feed has been found to be possible if the respondents are supported by her social networks to practise it.

The study also highlights the challenges to practicing exclusive breast feeding which were inspired by her relations/social network with the community members. These included the respondents's perception and knowledge on the benefits of breast milk/replacements; the efficacy of expressed breast milk when they need to be away from their infants; physical health of the woman and her belief in sufficiency of breast milk in infant feeding. Additionally, norm of mixed feeding; value placed on giving infants water; engagement of respondents in other economic activities with poor returns; stigma associated with exclusive breastfeeding/replacement feeding and community involvement in the infant feeding affairs influenced the perception of their ability to breast feed or replacement feed. This suggests that the perception of the respondents were influenced by the various networks of the respondents which in turn influenced their weaning practices.

The perception of the respondents on the recommended infant feeding mode among HIV positive mothers was varied with the respondents reporting a positive attitude towards exclusive breastfeeding for 4-6 months. However, exclusive breast feeding as per the finding of the current study did not emerge to meet the AFASS requirements based on the

socio-cultural context of the respondents. The respondents did not implement it due to one or a combination of factors. This included perceived 'cost' of breast milk to mean the cost of food respondents taken to produce breast milk, low acceptability within the community and stigma and their low opinion on its ability to ensure a healthy growth, development of infants and its sustainability. However, most respondents believed it was the most practical method of infant feeding to prevent HIV transmission post-delivery. The respondents disagreed with replacement feeding with cost being the main reason as respondents were from resource poor setting, and the perception on its inability to ensure proper growth and development of infants and that it was unacceptable since breast feeding is the norm. The perceptions of the respondents was based on information they received from their network with the community members and health personnel that influenced their motivation to practice them. This could have led to poor implementation of formula in the current study thus the need for promotion of exclusive breastfeeding through supportive counseling throughout the breastfeeding period and also creating awareness and involving their networks to enhance optimal and sustainable implementation.

The finding in the current study reveal that the weaning practices were influenced by respondents' perceptions which were in turn influenced by available information from various networks or other aspects of the environment; or directly influenced by their social networks based on the amount of power these networks may have to influence their decisions which would hence go against their personal perceptions of what they should practice. Only, few were practicing the recommended infant feeding practices, meaning that the majority were not adhering hence risking infecting their infants through MTCT. Thus the need for adequate and counseling to enhance adherence to the recommended infant feeding practices. The findings suggest that given the socio-cultural importance attributed to breastfeeding and the prevailing poverty, it may be more acceptable and more feasible to promote exclusive breast feeding than replacement feeding. Stigma and cultural feeding practices also place pressure on respondents to risk transmitting HIV to their infants, thus interventions aimed at promoting recommended safe infant feeding practice infant feeding practice among respondents must be sensitive to social expectations of the

respondents and provide an enabling environment by actively lobbying and engaging the entire community to support the respondents for safer infant feeding to be realized.

7.3 Conclusion

The first objective was to identify the weaning practices among the respondents. The key factor influencing the infant feeding practice among the respondents in this study is their perception and understanding that HIV transmission occur during breastfeeding and their focused determination to prevent HIV infection in their infants, both of which are inspired by the information they received from their network. However, some respondents did not adhere to the recommended infant feeding practices for HIV positive respondents due to the community norms, cultural beliefs, their perception of the recommended practices, their ability to practice it, the risk of being deprived of social life and their desire to prevent MTCT, which are linked to the power of various networks in influencing them. This poses a risk of MTCT to the infant, hence the need for adequate and continuous counseling of the respondents throughout the weaning period to enhance adherence to the recommended practice.

The choice and the implementation of infant feeding choice for HIV positive respondents depend mainly on the information they receive from their networks' socio-cultural perspectives of options available that in turn influenced the perception of the respondents and belief in the ability to practise the intentions. The belief among the respondents that breast milk is available and acceptable for the infant's nutrition suggests the need to continue promoting the benefits of exclusive breastfeeding and address an individual's values and community norms/values that challenge the practice by engaging the various network of the respondents to enhance support and sustainability of the recommended practices.

The perception of the respondents reflects, exclusive breastfeeding for 4-6 months, followed by weaning, is a viable option for HIV-infected mothers. There is need to promote exclusive breastfeeding, but allow the respondents to choose their preferable

recommended option and support them to deal with issues related to stigma associated with it and their negative perception on expressed breast milk.

The study calls for a multi-dimensional strategy involving the various networks of the respondents that influence her perception which include their male partners, the family, care giver, peer educators, health care workers and the community aimed at capacity building them on the need for PMTCT and recommended infant feeding method of breast feeding and their implications and address stigma associated with them thereby increasing acceptance at the community and individual level. At individual level, continuous intensive counseling to support the respondents understand the benefits and dangers of her infant feeding practice in relation to MTCT, nutritional sufficiency and coping with the challenges associated with exclusive breast feeding should be done. This is aimed at optimal adherence to the recommended breast feeding practices which was perceived as acceptable and affordable. Recommendations discussed below could address some of challenges experienced by the respondents.

7.4 Recommendations

1. The health care worker to adequately explore with an individual respondent the risks of MTCT, benefits, nutritional sufficiency of feeding choices and challenges of implementing breast feeding in light of her social network during counselling and foster a belief in her ability to practice it appropriately as recommended.
2. The supportive counselling given to the respondents should be a continuous process during ante-natal and post-natal period in order to enable her overcome challenges associated with breast feeding and curb the initiation of any inappropriate infant feeding practice such as mixed feeding. Most respondents had only discussed infant feeding once with the health care worker.
3. Educate and engage the social network of the respondents that include their peers, health care workers, partners, care givers and community members who influence their infant feeding practice on the need for PMTCT and recommended infant feeding practices to enhance adherence

7.5 Suggestions for Further Research

1. The study suggests that research be done on coping mechanisms of the respondents in implementing appropriate infant feeding methods of choice in order to highlight best practices that would enable them learn to cope with challenges associated with the various methods.
2. The study suggests further research on assessment of maternal adherence to infant feeding guidelines in context of HIV. These researches would increase knowledge on how best to implement recommended infant feeding practices.

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Appendix 1: Structured Questionnaire
Introduction

Good morning/afternoon! My name is Rachel Ogola. I am a student at Maseno University. I am conducting a study socio-cultural factors influencing infant feeding practices among clients attending Kisumu sub-County Hospital follow-up clinic. This study will be used to inform the policy makers on how best infant feeding could be implemented in resource limited settings. Your honesty in filling the questionnaire will be of much value to the study. Feel free to ask any question of concern. Your answers will be anonymous and confidential and will be used strictly for academic and research purposes. If you agree to participate in the study, please sign below:

Participants signature: _____ Date: _____

Please fill the questionnaire appropriately.

Interview no: _____ Date of interview: _____. Participants code: _____.

SECTION A: Socio- demographic Questions

1. What is your age? _____
2. What is your marital status?
 - a. Married monogamous
 - b. Married polygamous
 - c. Married inherited
 - d. Once married
 - e. Single
3. What is your religion?
 - a. Protestant
 - b. Catholic
 - c. Muslim
 - d. Other (specify)_____

4. What is your level of education?
 - a. No education
 - b. Some primary education
 - c. Completed Primary education
 - d. Some secondary education
 - e. Completed secondary education
 - f. College
 - g. University
5. What is your occupation?
 - a. Employed
 - b. Self - employed professional
 - c. Self - employed non- professional
 - d. House wife/ unemployed
6. What is your overall family income (from all sources)
 - a. 1000 and below
 - b. 1,001 – 5,000
 - c. 5,001 – 10,000
 - d. 10,001 -15,000
 - d. above 15,000
7. Where do you get your food from?
 - a. market/ shop/ buying
 - b. food donations from friends, family and charitable organizations
 - c. from family farm
 - d. buy some and get some from family farm
8. What is the age of your infant? _____in months
9. What is the sex of your infant?
 - a. Male
 - b. Female
10. What is the size of your household (inclusive of Husband)? _____

11. Who is the final decision maker on how your infant is fed?
- a. Husband
 - b. Myself
 - c. Joint (both husband and wife)
 - d. In-laws (specify) _____
 - e. Other (specify) _____

SECTION B: The transition of infant feeding from exclusive feeding to the introduction of other feeds

12. How did you feed the baby the day he/she was born?
- a. Breast milk alone
 - b. Cow's milk (powered milk/packet milk/) alone.
 - c. Other (specify) _____

b) What was your experience?

- a. comfortable
- b. uncomfortable

(c) Why were you feeling so?

13. Are you breastfeeding currently?

- a. Yes
- b. No

14. Is your baby receiving any other food? *(If no, move to question 17.)*

- a. Yes
- b. No

(b) If yes, which ones? (Tick all the applicable answers)

- a. Plain water
- b. Glucose water
- c. Cows milk (powered/liquid milk)
- d. Fruit juices
- e. porridge
- f. Other – specify _____

15. At what age (months) did you change from feeding your baby on breast milk alone to the introduction of other foods/water _____ (months).

(b) How did you change from feeding him/her on breast milk alone to the introduction of other foods/water?

- a. I stopped breast feeding at once/abruptly
- b. I stopped breast feeding gradually for less than 2 weeks
- c. I stopped breast feeding gradually for more than 2 weeks
- d. I am both breast feeding and giving other foods.

16. What is your reason for changing your infant feeding pattern?

17. What is your reason for not changing your infant feeding pattern?

18. Who do you leave your baby with if you were to be away unexpectedly for say more than 3 hours?

- a. Husband
- b. In-law – specify _____
- c. Baby sitter
- d. Friend
- e. Other – specify _____

(b) Why do you prefer to leave your baby with this particular person?

19. Does the food you feed to your baby same as the one given by others who feed him/her?

- a. Yes
- b. No

(b) If NO, why is it so?

SECTION C: Social-cultural factors influencing infant feeding practice

20. Do you know the HIV status of your partner?

a. Yes

b. No

(b). Does your partner know your HIV status?

a. Yes

b. No

(c) Is your HIV status the same as that of your partner?

a. Yes (concordant)

b. No (discordant)

21. Have you ever heard about safe infant feeding did you first hear about safe ways of preventing mother to child transmission of HIV through feeding?

(a) If yes, from where?

a. Hospital

b. newspaper

c. Chief's baraza

d. Radio

e. Television

e. others _____

(b) If yes, at what point in your pregnancy did you discuss it? _____(in months).

22. With whom do you feel you exhaustively discussed safe ways of preventing mother to child transmission of HIV through feeding? (Tick all the appropriate options)

a. peer /support group

b. health care worker

c. staff mates

d. husband

e. in-laws (specify) _____

23. Did you discuss with your husband about safe ways of preventing mother to child transmission through feeding?

a. Yes

b. No

(b) In your opinion would you advice an HIV positive woman to discuss with her partner on how to feed their infant to prevent mother to child transmission of HIV?

- a. Yes
- b. No

(c) Explain your answer?

24. Does your work or employment affect your infant feeding practice?

- a. Yes b. No.

(b) How?

25. What are infants in your community fed on within the first 6 months of their lives?

(tick all the options)

- a. breast milk
- b. powder/liquid milk
- c. Uji
- d. plain water
- e. glucose water
- f. Other (specify) _____

26. Is exclusive breastfeeding acceptable in your community?

- a. Yes
- b. No

(b) If yes, for how long? _____(days/week/months)

(c) Why is exclusive breast feeding not practiced after the period you have specified?

28. Does your religion / church recommend exclusive breast feeding?

- a. yes
- b. No.

29. How can HIV positive women protect her baby from getting HIV during her feeding period? (Tick where applicable)

- a. Use of condom
- b. Not breast feeding at all
- c. Breast feeding alone for 3-4 weeks
- d. Treating and management of breastfeeding problems such as cracked nipples, and mastitis?
- e. Nothing
- f. I don't know

SECTION D: Perception of the women

30. What method of infant feeding do you think is best for an exposed infant in your community during the first 6 months of his or her life?

- a. exclusive breast feeding then an abrupt or gradual cessation for less than 2 weeks
- b. exclusive breast feeding then a gradual cessation for more than 2 weeks
 - b. exclusive replacement feeding for 4-6 weeks then introduction of other foods.
 - f. mixed feeding

31. How long do you think most mothers in this community should exclusively breastfeed their babies? _____(months).

(b) What are your reasons?

32. What is your opinion on exclusive breastfeeding for 4-6 months?

- a. Strongly agree
- b. Agree
- c. Both agree and disagree
- d. Disagree
- e. Strongly disagree

(b) What are your reasons?

33. (a) What is your opinion on an abrupt cessation of exclusive breastfeeding?

- a. Strongly agree
- b. Agree
- c. Both agree and disagree
- d. Disagree
- e. Strongly disagree

(b) What are your reasons?

34. What is your opinion on feeding an infant on feeding an infant on formula milk (powder or liquid milk) without giving any other food for 6 months from birth?

- a. Strongly agree
- b. Agree
- c. Both agree and disagree
- d. Disagree
- e. Strongly disagree

(b) What are your reasons?

35. Why do you think mixed feeding is practiced?

Appendix 2: In-Depth Interview Guide

Introduction

Good morning/afternoon! My name is _____am a student at Maseno University. I am conducting a study on the socio-cultural factors influencing infant feeding practices among clients attending Kisumu sub-County Hospital follow-up clinic. This study will be used to inform the policy makers on how best infant feeding could be implemented in resource limited settings. Your honesty in answering the questions will be of much value to the study. Feel free to discuss and ask any questions of concern. Your answers will be strictly anonymous and confidential and will be used strictly for academic and research purposes. I would like to tape record as we discuss so that I can capture all the details correctly.

Ask the respondent if she is willing to participate in the study

1. On the infant feeding habits in this community, probe for breastfeeding, replacement feeding, mixed feeding (For all the responses, ask whether exclusive or not?)
2. On the changes that occur in infant feeding method, probe on how an infant is fed on the day he/she is born, the process of introduction to weaning, the age at which feeding patterns changes, how it changes and reasons for changes (For all the responses ask for their experiences).
3. In investigating the help of others in feeding of the infant, probe if it is husband, baby sitter, sibling, in-laws – specify? Why, those particular people? Is the method same as one used by the mother and why? Who will you leave your baby with, if you are to be away unexpectedly for a number of hours and reasons for doing so?
4. On Social-cultural factors, probe for the factors that influence infant feeding such as beliefs and customs associated with infant feeding and care, the costs in terms of time and resources, the role of community and male partner in infant feeding.
5. On the value and sufficiency of exclusive breastfeeding or exclusive replacement feeding (home-modified or commercial formula) in the community, What infant feeding habits is considered best for the first one year of an infant's life? For all the answers, probe for the prevailing notions, the period for the sufficiency and the reasons behind these notions.

6. On perceptions on the recommended infant feeding practices, probe for exclusively replacement feeding, exclusive breastfeeding, an abrupt cessation of breastfeeding, and the period of exclusively breastfeeding or replacement feeding and the reasons for these perceptions.
7. On protection of infants from getting HIV during lactation, Probe for safe sex during to prevent re-infection, mixed feeding, treating and management of breastfeeding problems such as cracked nipples, and mastitis

THANK YOU FOR PARTICIPATING IN THIS STUDY

Appendix 3: Focus Group Discussions Guide

Introduction

Good morning/afternoon! My name is _____am a student at Maseno University. I am conducting a study socio-cultural factors influencing infant feeding practices among clients attending Kisumu sub-County Hospital follow-up clinic. This study will be used to inform the policy makers on how best infant feeding could be implemented in resource limited settings. Your honesty in answering the questions will be of much value to the study. Feel free to participate in the discussion and ask any question of concern. Your responses will be anonymous and confidential and will be used strictly for academic and research purposes. I would like to tape record as we discuss so that I can capture all the details correctly.

Ask the respondents if they are willing to participate in the study

1. On the infant feeding habits in this community, probe for breastfeeding, replacement feeding, mixed feeding, (For all the responses, ask whether exclusive or not?)
2. On the changes that occur in infant feeding method, probe on how an infant is fed on the day he/she is born, the introduction to weaning, the age at which feeding patterns changes, how it changes and reasons for changes (For all the responses ask for experiences).
3. In investigating the help of others in feeding of the infant, probe if it is husband, baby-sitter, sibling, in- laws – specify? Why those particular people? Is the method same as one used by the mother and why, and probe who will you leave your baby with, if you are to be away unexpectedly for a number of hours?
4. On Social-cultural factors probe for the factors that influence infant feeding such as beliefs and customs associated with infant feeding and care, the costs in terms of time and resources, the role of community and male partner in infant feeding and their reasons.
5. On the value and sufficiency of exclusive breastfeeding or replacement feeding (home-modified or commercial formula) in the community, What infant feeding habits is considered best for the first one year of an infant's life? For all the answers, probe for the prevailing notions, the period of sufficiency and the reasons behind these notions.

6. On perception on the recommended infant feeding practices, probe for exclusively replacement feeding, exclusive breastfeeding, an abrupt cessation of breastfeeding, and the period of exclusively breastfeeding or replacement feeding and the reasons for these perceptions.
7. On protection of infants from getting HIV during lactation, probe for safe sex during to prevent re-infection, mixed feeding, treating and management of breastfeeding problems such as cracked nipples, and mastitis

THANK YOU FOR PARTICIPATING IN THIS STUDY