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Influence of Mothers-in-Law on Infant Feeding Practices of Mothers Living With HIV in Rural Cameroon

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Abstract

Mothers living with HIV (MLHIV) face complex challenges regarding infant feeding practices, which often restrict their ability to adhere to their chosen or medically recommended feeding behaviors. Mothers-in-law (MIL) enjoy significant influence and participate actively in the rearing of grandchildren in Cameroon. However, the extent to which MIL influence infant feeding behaviors of their daughters-in-law have not been studied. The theory of planned behavior (TPB) was used in this phenomenological study to explore how attitudes, subjective norms, and perceived behavioral control influenced infant feeding practices of 9 MLHIV in rural communities of the North West Region of Cameroon. The five steps of data explicitation detailed by Groenewald were used to analyze the data. Findings indicated that MLHIV who were in close contact with their MIL experienced strong influence towards infant feeding practices of their babies. While MLHIV who were practicing exclusive breastfeeding received support for appropriate infant feeding practices, those giving their babies artificial milk were influenced to adopt inappropriate feeding practices, specifically mixed feeding. The study results may be used to promote positive social change by improving on the infant feeding practices of MLHIV. This could lead to a reduction of mother to child transmission of HIV.

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Dedication

This work is dedicated to Him, the Almighty, Sovereign, King of Kings, and Lord of Lords for who He is. I give Him all the glory, honor, and adoration.

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Chapter 1

Introduction to the Study

HIV/AIDS poses one of the biggest threats to population health, especially in sub-Saharan Africa (GBD 2015 HIV Collaborators, 2016). According to the United Nations Joint Program for HIV/AIDS (UNAIDS), at least 34 million people are living with the HIV virus (UNAIDS, 2016b). Although the global response to the disease has resulted in a reduction in the number of people dying from AIDS, it is still the leading cause of death among women of reproductive age. At least half of the people living with HIV/AIDS are women, and almost half of new adult HIV infections occur among women(UNAIDS, 2013). These trends indicate that babies born to women living with HIV (WLHIV) are at high risk for exposure and infection. Vertical HIV transmission is preventable with skilled health care intervention; however, after decades and hundreds of millions of dollars allocated to preventing pediatric HIV, in 2015 there were approximately 150,000 new cases worldwide (UNAIDS, 2016b).

Interventions to prevent mother-to-child transmission (PMTCT) through comprehensive PMTCT-HIV programs have had tremendous impact and notable successes in various contexts. Major benefits of the PMTCT programs are the lessons learned and critical recommendations for the goal to eliminate MTCT. For example, the ability to detect and to measure HIV is critical to understanding the timing of infection and the role of replication in disease progression. Research and development inform global policy and evidence-based WHO PMTCT guidelines (Ciaranello et al., 2011; UNAIDS, 2011).

Estimated MTCT rates in West and Central Africa fell from an average of 125,300 in 2010 to 91,000 in 2015 (UNICEF, 2015). According to UNAIDS Cameroon, the number of new HIV infections in children ages 0 to 14 years fell from an average of 65,000 in 2010 to 41,000 within the same period (UNAIDS, 2016a).

For this study, a MLHIV is the HIV positive daughter-in-law of her husband's mother. MLHIV face challenges when it comes to choosing the appropriate feeding methods for their babies and following through with their choices (Hoddinott, Craig, Britten, & McInnes, 2012; Laar & Govender, 2011). MLHIV are not the sole decision-makers and have limited self-efficacy with respect to their choice of infant feeding practice. This is particularly true for MLHIV in resource-poor settings such as rural communities in Cameroon (Lawani, Onyebuchi, Iyoke, Onoh, & Nkwo, 2014). Additionally, people living with HIV (PLHIV) tend to conceal their HIV status from family and friends out of fear of stigma and discrimination. Furthermore, mothers-in-law (MIL) traditionally play a role in caring for their grandchildren in rural communities in Cameroon. Unfortunately, several concerns remain poorly understood or unanswered. Many interventions were not sufficient to reach the Global Plan target of 90% reduction by 2015 (UNAIDS, 2011). Cameroon's estimated 27% reduction of new pediatric infections between 2009 and 2014 highlight serious challenges. Although MTCT rates are falling due to increased awareness and service delivery, an estimated 43% of (MLHIV) infected their infants (42,000 new pediatric infections) within 6 weeks of delivery; there were another 56,000 new postnatal infections (57%) of infants born in 2014, and 99,000 new pediatric HIV infections in West and Central Africa alone (Ciaranello et al., 2011; UNICEF, 2015).

Pediatric HIV infections commonly occur during pregnancy, labor, delivery, or breastfeeding (Nguefack et al., 2016; UNAIDS, 2016a). There are numerous contributing factors that limit access to health care, PMTCT, antiretroviral treatment (ART), and antenatal services, which hinders progress toward the virtual elimination of MTCT (Byamugisha, Tumwine, Semiyaga, & Tylleskar, 2010; World Health Organization, 2010). Stigma and discrimination, the cost of health services and treatment, the cost of transportation to and from health facilities, sociocultural factors, and the cultural diversity within Cameroon are critical factors limiting access to ante-natal care (ANC), and PMTCT services (Muko, Tchangwe, Ngwa, & Njoya, 2004).

Multiple social and environmental factors influence infant feeding choices and practices among MLHIV; however, there is a gap in understanding how and the extent to which MIL influence the infant feeding choices and practices of MLHIV. Therefore, efforts to PMTCT-HIV remain a public health priority and warrant further exploration of the combination of factors that directly impact whether she will perform the behavior (Kafulafula, Hutchinson, Gennaro, Guttmacher, & Kumitawa, 2013; Temesgen, Birhanu, Astale, & Dejene, 2013). If MLHIV have the intention and self-efficacy to practice the infant feeding behavior of their choice, this could contribute to closing the gap between her knowledge that she should exclusively breastfeed and her behavior of exclusively breastfeeding. If MLHIV can freely choose to exclusively breastfeed, this may contribute to further reduction in new pediatric infections. The author investigated whether a MIL has any influence to affect the infant feeding behavior or the decision-making process of the MLHIV.

The study results could contribute to positive social change by catalyzing the development of tools and guidelines that could enhance the capacity of MIL and enable them to play an important role in ensuring that MLHIV adopt optimal infant feeding practices. This could improve health outcomes for infants exposed to HIV. In addition, the study addressed knowledge gaps in the relationship between MIL and MLHIV and the decision-making processes involved in infant feeding practices.

Given the role that HIV-related stigma and discrimination play in determining mothers' feeding choices, mainly as a result of nondisclosure, the study findings could be used to advocate for the involvement of MIL as agents of change regarding social support for PLHIV, especially MLHIV. This study may further contribute to improving health outcomes of HIV-exposed children.

Chapter 1 includes a brief summary of the literature on HIV and infant feeding in general with a focus on cultural factors that influence the decision-making of MLHIV concerning infant feeding practices. Information on knowledge-related gaps is provided along with a rationale for the study. A description of the research problem is provided. This is followed by evidence from the literature that the problem is not only current and relevant but also significant for eliminating vertical transmission and for PMTCT-HIV programs. The research questions are presented followed by a brief summary of the theory of planned behavior (TPB) used to guide the study.

Background

Several studies indicated that the decision-making process for infant feeding practices involves more than the MLHIV, and includes layers of human and environmental complexity. Zulliger, Abrams, and Myer (2013) found that cultural factors, economic factors, family and social context, and clinical advice strongly influence breastfeeding intentions and practices. Even when breastfeeding is promoted, barriers to practice include previous experience with replacement feed, the need for involving other caregivers, and fear of infecting the infant. MLHIV navigate dynamic influences to arrive at their infant feeding practice. Laar and Govender (2011) reported that family members influence the infant feeding practices of MLHIV, and in some cases act as barriers to appropriate infant feeding practices. Laar and Govender recommended that these barriers be taken into consideration when designing interventions for improved infant feeding practices. Lawani et al. (2014) reported that family members significantly influence infant feeding practices of MLHIV and as such are a key predictor of what MLHIV choose how to feed their infants.

Kafulafula et al. (2013) reported that MLHIV expressed conflicting perceptions concerning the benefits of exclusive breastfeeding to PMTCT-HIV. Kafulafula et al. recommended comprehensive sensitization and awareness-raising efforts among communities, family members, and health care workers. Maru et al. (2009) reported that MLHIV who practiced inappropriate feeding practices such as mixed feeding cited family pressure as a factor. Falnes et al. (2011) reported that MIL believe themselves responsible for family health issues and child care; as a result, MLHIV practice customary and traditional infant feeding practices according to the powerful expectations of their MIL.

Falnes et al. recommended that limiting the influence of MIL by increasing spousal prominence be further explored.

Osoti, Han, Kinuthia, and Farquhar (2014) and Abuhay, Abebe, and Fentahun (2014) reported that male partners play an important role in ensuring optimal infant feeding practices within the context of PMTCT-HIV programs.

Immediate and extended family relationships have been shown to influence MLHIV infant feeding practices. The importance of the husband's participation in PMTCT, ANC, and ART uptake has been well documented, including the influence on improved maternal and child health outcomes. Although grandmothers in sub-Saharan Africa have been shown to play a critical role in the health of their grandchildren, literature on their influence on infant feeding practices of MLHIV is lacking. This study was conducted to narrow the gap by addressing whether or how MIL influence the infant feeding practices of MLHIV.

There is evidence that MLHIV-MIL relations may interfere with MLHIV implementing appropriate infant feeding practices(Falnes et al., 2011). This exposes the infant to increased risk of HIV infection. A greater understanding of the relationship between MIL and MLHIV and its influence on infant feeding practices is needed to inform community-based programs that may contribute to significant reductions in new pediatric HIV infections and improved infant nutrition, morbidity, and mortality.

Problem Statement

There is a risk of MTCT of HIV even when a MLHIV practices exclusive breastfeeding (EBF) for 6 months. However, the risk of transmission in EBF infants is lower compared to infants who are mixed feeding, and is lower still when MLHIV adhere to EBF and ART regimens. Complementary feeding and replacement feeding are also common infant feeding practices in developing countries, but EBF is acceptable, sustainable, affordable, and safer than breastfeeding alternatives (Ngoma et al., 2015). A MLHIV infant feeding practice is a key determinant in PMTCT and in achieving desirable infant health outcomes (Homsy et al., 2010; World Health Organization, 2010). The MLHIV often lacks autonomy over infant feeding practices, as her family role is subordinate to her husband and MIL. The lack of autonomy to make infant feeding decisions or to adhere to infant feeding guidelines stems from the family, cultural, and social barriers that MLHIV are unable to overcome, which also forces them to hide their HIV status (Laar & Govender, 2011). The degree of powerlessness faced by the MLHIV implicates family and community in new pediatric infections because her decisions are undermined by several other factors (Schacht et al., 2014).

A MLHIV's autonomy and right to independent decision-making are vital and cannot be overemphasized. The WHO guidelines state that MLHIV should use replacement feeding exclusively or mixed feeding to reduce the risk of MTCT. Regardless of this universal recommendation, the mother's choice is paramount and should be acknowledged and respected (Saadeh, Henderson, & Vallenas, 2005). Mothers have the primary and greatest responsibility in deciding how to feed their children. The associated risk of MTCT

notwithstanding, the MLHIV should have the last word after considering recommendations and should be able to decide to EBF her infant.

Other factors that influence MLHIV infant feeding practices include family income, access to replacement feed, the MLHIV's quality of health, and her labor for source of income. In addition, fathers, other grandmothers, and the MIL contribute to decisions regarding children in the family (Byamugisha et al., 2010; Hoddinott et al., 2012). The influence of male partners on the infant feeding practices of MLHIV within the context of PMTCT- HIV programs have been extensively documented; however, literature on the influence of MIL on infant feeding practices of MLHIV is limited.

Laar and Govender (2011) recommended that strategies for behavior change targeting key family members including MIL should be carried out to promote optimal infant feeding practices. These strategies can only be implemented if there is improved understanding of the influence of MIL on MLHIV. Falnes et al. (2011) recommended the inclusion of MIL in infant feeding programs. A greater understanding of their relationship with MLHIV and their roles and responsibilities related to infant feeding practices is needed to adequately involve them in supporting appropriate infant feeding practices.

Noubiap, Bongoe, and Agokeng (2013) attributed high MTCT-HIV rates in the East Region of Cameroon (11.4% compared to national average of 6.8%) to limited access to ART and poor infant feeding practices of MLHIV. Noubiap et al. recommended prioritizing interventions aimed at improving the infant feeding practices of MLHIV. Identifying influencers, particularly family relations such as MIL, would be beneficial.

Appropriate infant feeding practices are critical for effective PMTCT programs. According to the World Health Organization (2010), infant feeding is "one of the most critical interfaces between HIV and child survival" World Health Organization (2010, p. 28). Buesseler, Kone, Robinson, Bakor, and Senturia (2014) reported that mothers' greatest struggle in preventing HIV transmission to their infants is adherence to infant feeding guidelines. Kafulafula, Hutchinson, Gennaro, and Guttmacher (2014) reported a high level of acceptance of exclusive breastfeeding in Malawi. Kafulafula et al. (2014) also reported that some mothers were not adhering to exclusive breastfeeding because of the fear of transmitting the virus to their children. Kafulafula et al. (2014) recommended the education of health care workers and the community at large. Targeted education that focuses on those who have the most influence on mothers would be most beneficial. Understanding how close relations such as MIL influence the infant feeding practices of MLHIV would help in enhancing adherence to the infant feeding guidelines.

Despite clear guidance from the WHO highlighting the importance of EBF for the first 6 months, the rates of EBF in Africa range from 24% to 68% (Fadnes, Engebretsen, Wamani, Semiyaga, et al., 2009; Fadnes, Engebretsen, Wamani, Wangisi, et al., 2009; Ladzani, Peltzer, Mlambo, & Phaweni, 2011; Suryavanshi et al., 2003). There is need to identify positive influencers and their roles and design programs that could include them in infant feeding programs. MIL constitute a potential group of positive influencers. Therefore, there is need for further research on the role they play in the infant feeding practices of MLHIV.

Purpose of the Study

The purpose of this study was to explore and describe the relationships between MLHIV and their MIL in rural communities in the North West Region of Cameroon and how the relationships affect MLHIV infant feeding practices. I used qualitative methods to examine how MLHIV perceptions of behavioral control, beliefs, attitudes, and subjective norms influenced their infant feeding practices, and whether there were associations between MLHIV-MIL relations.

An anti-positivist or post positivist paradigm was used for the study. Qualitative methodology was used to understand the phenomenon and to describe what was happening, explain how it was happening, and provide an explanation of why it was happening. A phenomenological design was used to collect information on lived experiences of MLHIV and their MIL. This was needed to understand the relationships between MLHIV and their MIL and how they affect infant feeding practices. Perceptions of MIL autonomy may differ among MLHIV with different infant feeding practices, so this was examined. Additionally, I examined whether a perception of MIL autonomy was associated with infant feeding practices in the North West Region of Cameroon.

Research Questions

This study focuses on three key research questions.

1. What role do MIL play in the infant feeding practices of MLHIV?
2. How do MLHIV perceive the influence of their MIL on their infant feeding practices?

3. How can MIL be included in infant feeding programs to ensure optimal infant feeding practices?

Theoretical Framework

The theory of planned behavior (TPB) was used to guide the study. TPB has been used for predicting as well as understanding the infant feeding practices of MLHIV (Kafulafula et al., 2013; Temesgen et al., 2013). The principal concepts of the theory are behavioral beliefs and attitudes toward behaviors, normative beliefs and subjective norms, control beliefs and perceived behavioral control, as well as behavioral intention and behavior. According to TPB, behavioral intentions and behaviors are shaped by a person's attitude toward the specific behavior, subjective norms, and their perceived control in performing the behavior. Behavioral beliefs result in healthy or unhealthy attitudes, normative beliefs result in perceived social pressure, and control beliefs result in perceived behavioral control (I Ajzen, 2010). A MLHIV's intention to breastfeed or not can be analyzed using TPB.

TPB is a relevant theory for understanding and predicting health and social behavior. The theory is based on certain major concepts including intention, behavior, subjective norms, perceived behavioral control, and behavioral attitudes (Kafulafula et al., 2013). TPB was chosen for the study because the framework encompasses factors thought to influence infant feeding practices of MLHIV. There is evidence that HIV/AIDS-related knowledge, perception of HIV, attitudes toward the disease, knowledge of available

services, and influences of people around a MLHIV are determinants of her choice of infant feeding practice (Muko et al., 2004; Zulliger et al., 2013). In relation to TPB, the attitudes of MLHIV might be influenced by HIV-related knowledge and perception of the illness and information on availability of services. A MLHIV's choice of infant feeding practice has been shown to be influenced by social pressure from those around the mother (Osoti et al., 2014). The normative belief and subjective norms factor could be used to predict and explain the influence of those around the mother.

With regard to breastfeeding behaviors of MLHIV, the practice of EBF is partly determined by their intentions and perceptions of EBF. MLHIV perceptions regarding breastfeeding will also influence their infant feeding behaviors. Their perceptions are based on various factors including personal beliefs, principles, and sociocultural factors. In developing countries, EBF is considered the preferred infant feeding practice, which makes replacement feeding practically unacceptable.

TPB suggests that previous behavior is a good predictor of future behavior. Women who have breastfed in the past are likely to breastfeed in the future, unlike women who have no such experience or have prior experience using replacement feeding. MLHIV who have breastfed in the past may also intend to breastfeed their future infants. In cases in which previous breastfeeding experiences were positive, mothers are likely to breastfeed longer or EBF. Conversely, negative breastfeeding experiences or employment are barriers to EBF (Ogwu et al., 2016). For MLHIV who have experience only with exclusive replacement feeding in the past or who are employed formally, adopting EBF practice may

be so challenging that exclusive replacement feeding for their infants remains the preferred infant feeding practice (Ogwu et al., 2016; Zulliger et al., 2013). An individual's behavior is determined by her or his intention and perception. I examined how attitudes, subjective norms, and perceived behavioral control influenced MLHIV's intention to EBF, and whether there was any association between these factors and perceptions of MIL influence.

In addition to the TPB, another theory that could be used to understand breastfeeding practices of MLHIV is grounded theory. Grounded theory is used to explore major structural and social processes that are responsible for the varying behavior patterns within particular contexts (Wuest, Merritt-Gray, Berman, & Ford-Gilboe, 2002). MLHIV practice different infant feeding behaviors. For some MLHIV, EBF may be their preferred choice or only option. For others, feeding their infants with alternatives to breast milk will be the best alternative. Social and structural processes that may influence the different choices for MLHIV range from health services advice, her working conditions, social support, education, coping skills, and social status (Ogwu et al., 2016; Tomlinson et al., 2014; Wuest et al., 2002). Depending on how these conditions are in play, MLHIV will adopt different health behaviors. For example, if the necessary social support is available for MLHIV, they are more likely to adopt appropriate infant feeding patterns and behaviors such as EBF (Tomlinson et al., 2014; Zulliger et al., 2013). Social support should include support from the husband/partner, family, friends, and society. Stigmatization by society based on HIV status, interferes with the development of a MLHIV's autonomy to adopt and adhere to safe infant feeding behavior.

Nature of the Study

A qualitative methodology was used to carry out the study. The qualitative methodology was used to understand the phenomenon and to describe what is happening, explain how it is happening and provide an explanation of why it is happening. A phenomenological approach was used to collect information on "lived" experiences of mothers and their mother in-laws. This was needed in order to understand the relationships between mothers and their mothers-in-law and how it affects the infant feeding practices.

Definition of Terms

Acquired immunodeficiency syndrome caused by the HIV virus (AIDS): A combination of diseases and opportunistic infections that result from an advanced stage of HIV (UNAIDS, 2011).

Antiretroviral therapy (ART): A combination of drugs given to people infected with the HIV Virus (WHO, 2014).

Epidemic: An increase in the number of cases of a particular disease above the expected level in a population in a specific area (CDC, 2012).

Exclusive breastfeeding: The practice of feeding a baby only breast milk for the first six months of life without any other food, water, or drink (Measure DHS, 2011).

HIV counseling: The provision of information on HIV/AIDS and guidance to an individual to help him or her make an informed choice (CDC, 2011).

HIV incidence: The number of new HIV infections that occur in a population within a specific time period (WHO, 2015).

HIV prevalence: The percentage of the population living with HIV. To understand the HIV and AIDS epidemic, it is necessary to look at certain figures (Center for Disease Control (2015)).

HIV treatment: The provision of antiretroviral drugs to someone who is HIV positive to reduce the level of HIV in the body (AIDS.gov (2016).

Informed consent: The process of providing information to a patient to ensure that the patient is able to decide whether he or she can be tested for HIV (Centers for Disease Control, 2006).

Malnutrition: A condition that occurs when someone is not getting enough food or not getting the correct type of food (World Food Program, 2015).

Maternal mortality rate: The number of female deaths per 100,000 live births that occur as a result of pregnancy excluding accidents (World Health Organization (2016).

Mother(s) living with HIV (MLHIV): The daughter-in-law of the husband's mother, who is living with HIV, has delivered at least one child, and is the primary care provider of one or more infants.

Mixed feeding: When the baby receives both breast milk and breast milk substitutes such as commercial formula milk.(Measure Evaluation, n.d).

Mother-to-child transmission of HIV (MTCT): The transmission of HIV from an HIV-positive mother to her child during pregnancy, labor, delivery, or breastfeeding (AVERTING AIDS, 2014).

Prevention of mother-to-child transmission (PMTCT): The provision of a series of interventions including comprehensive antenatal and postnatal services, HIV testing during pregnancy, antiretroviral treatment, safe childbirth practices, and appropriate infant feeding aimed at reducing the risk of HIV transmission from mothers to their children (AVERTING AIDS, 2014).

Opt-in screening: The process in which the client asks to have an HIV test done (Centers for Disease Control, 2006).

Opt-out screening: The process in which HIV tests are routinely done for all clients except clients who refuse to take the HIV test (Centers for Disease Control, 2006).

Vertical transmission: The transmission of the HIV virus from a mother to her child during pregnancy, labor, or delivery, also referred to as mother-to-child transmission (AVERTING AIDS, 2014).

Viral load (VL): The amount of HIV in the blood of a patient.

Assumptions

I assumed that participants would answer interview questions in a relaxed but timely and straightforward manner and that they would openly share their infant feeding behaviors such as experiences, concerns, challenges, and coping strategies. I assumed the

behaviors and experiences would be diverse and that a phenomenological study would be appropriate to capture those lived experiences.

Scope and Delimitations

A key delimitation was the study population: MLHIV with children 12 months of age or younger. MLHIV with children below 1 year were chosen to ensure that the subjects could easily recall their experiences. The key concepts underpinning the study were self-efficacy, self-consistency, self-actualization, and that MLHIV and close relations should be well informed about current infant feeding recommendations and that this knowledge would influence their infant feeding practices. Qualitative methods were chosen because in-depth experiences could only be captured using qualitative methods.

Because interview questions were designed to capture information from MLHIV who were either in close contact with their MIL or living with her, the potential for transferability to other MLHIV is limited.

Limitations

Several limitations could have affected the results of the study. First, MLHIV were purposely selected as opposed to randomly sampled. However, the three health facilities from which the nine mothers were selected were randomly sampled, which partially mitigated this limitation. Furthermore, phenomenological studies rarely include random sampling methods to recruit study participants. Second, the interview process was limited to MLHIV who were willing to disclose their status to other MLHIV. Finally, the

likelihood of recall bias existed in the study. This was partially mitigated by MLHIV discussing recent experiences.

Significance

The study results could be used to inform policy decisions on infant feeding practices within contexts where MLHIV face social norms that undermine global PMTCT-HIV efforts. The results could be especially useful in the training of health staff, peer educators, and other social service providers to support MLHIV in practicing preferred infant behaviors. Trained staff and trained volunteers could enlist the support of MIL in designing and implementing campaigns aimed at promoting optimal infant feeding practices and a mother's right to decide how to feed her children. Such activities could contribute to positive social change by catalyzing the transformation of MIL into stakeholders who play important roles in supporting appropriate infant feeding practices. By extension, MIL may contribute to improved health outcomes for infants in the reduction of new pediatric HIV cases.

In addition, the study results may be used to narrow knowledge gaps on MIL-MLHIV relationships and whether such relationships are associated with the infant feeding practices of MLHIV. The role of HIV-related stigma and discrimination in detrimental infant feeding behaviors, mainly as a result of nondisclosure, has been well established. This study may illustrate how MIL can serve their communities by increasing partner and family disclosure and as a powerful sources of social support for MLHIV.

Summary

Cameroon, like many countries around the world, is a predominantly patriarchal society. Despite decades of efforts and funding to halt the spread of HIV, especially vertical transmission, the incidence rate of infant HIV remains above 5%(Unite for Children, Unite Against AIDS, 2012). This is especially unsatisfactory given that MTCT is preventable. Several studies have shown that although vertical transmission is preventable, there are dynamic contributing factors that remain poorly understood or inadequately addressed and that undermine efforts to eliminate MTCT-HIV. One of the contributing factors is the relationship dynamic between MLHIV and MIL. In resource-poor settings, gender-based violence, inequity, and discrimination put women and children at increased risk of HIV infection. Men's participation in reproductive and sexual health remains low. Although MIL participation is active, it is often based on myth and misinformation. Therefore, young and new MLHIV face challenging barriers to access health services for themselves and their infants. Using TPB, I conducted this study to determine where barriers to optimal infant feeding practices can be overcome to eliminate new pediatric infections, inform PMTCT-HIV programs, and promote behavior change. To achieve this aim, I examined MIL-MLHIV relations to determine whether any associations existed between the relationship and the TPB factors that influence infant feeding choices of MLHIV.

Chapter 2

Literature Review

The purpose of this study was to explore and describe the relationships between MLHIV and their MIL in rural communities in the North West Region of Cameroon and to determine whether there was any association between the MIL-MLHIV relationship and MLHIV infant feeding practices. I used qualitative methods to assess MIL perceptions, beliefs, attitudes, and experiences regarding infant feeding and how they affect the infant feeding practices of MLHIV.

In the following literature review, I examine peer-reviewed articles from academic databases. The other main criterion was date of publication. The literature review focuses on articles published within the last 5 years, and includes articles published within the past 15 years only when necessary to address relevant HIV and breastfeeding issues. The purpose of the literature review is to provide insights that informed the direction of the research. The insights were used to streamline the study to ensure that the objectives were met. Finally, the literature review addresses the theoretical framework of the study.

Preview of Major Sections

HIV/AIDS in the World.

Three decades after the discovery of the HIV virus, AIDS remains a global health problem. According to UNAIDS (2016b), an estimated 36.7 million people across the world were living with the HIV virus at the end of 2015. UNAIDS (2016b) reported that significant progress has been made in the fight against HIV/AIDS and this has resulted in

a 45% decline in the number of deaths since 2005. In 2015, 2.1 million new infections were recorded, which was the lowest since 2005 (UNAIDS, 2015). New infections among children in 2015 declined by 50% since 2010(UNAIDS, 2016b). Sub-Saharan Africa, where two thirds of HIV positive people live, still endures the worst of the epidemic. The region is home to nine out of the 15 countries in the world that account for 75% of the 2.1 million people who were infected in 2015 (UNAIDS (2016b). In sub-Saharan Africa, adolescent girls and young women make up for one in four new HIV infections (UNAIDS, 2016b). There is increased need to prioritize interventions to increase HIV/AIDS services among women and young girls. Appropriate infant feeding is one of the areas in which there is need for increased services. An understanding of how HIV transmissions impact infant feeding is needed to design appropriate interventions that will improve infant feeding services.

HIV Transmission and Infant Feeding

HIV positive mothers face a dilemma when it comes to choosing the most appropriate method of feeding their children. Breast milk remains the best method for feeding infants. Breast milk contains all the nutrients that are needed by babies as well as agents that provide immunity against childhood diseases such as respiratory infections and diarrhea. However, breast milk is one of the principal routes through which HIV is transmitted. If no antiretroviral drugs are being taken, breastfeeding for 2 or more years can double the risk of the baby becoming infected to around 40% (Coutsoudis, 2000). Studies have shown reductions in transmission rates ranging from 19% to 77% after four months of breastfeeding when mothers were given antiretroviral drugs (Chasela et al.,

2010; Kilewo et al., 2009; Shapiro et al., 2010). Although avoiding breastfeeding and replacing it with artificial feeding reduces HIV transmission from mothers to babies, studies from Africa have shown an increased risk of morbidity to diseases such as diarrhea and respiratory tract infections among infants breastfed for less than 6 months (Doherty et al., 2014; Nduati et al., 2000). As a result, balancing HIV prevention with protection from other causes of infant mortality is a key consideration for determining the most appropriate choice of feeding for MLHIV. The current WHO infant feeding guidelines for infants born to MLHIV in resource-limited areas that are prone to infectious disease and malnutrition recommend exclusive breastfeeding for the first 6 months of life (World Health Organization, 2010). This should be followed by complementary foods and breastfeeding through 12 months of life (World Health Organization, 2010).The WHO further recommends the addition of antiretroviral prophylaxis to both infants and mothers to reduce HIV transmission during the breastfeeding period (World Health Organization, 2010).

Status of HIV in Cameroon

Cameroon is a country in Sub-Saharan Africa, which is a region with high HIV prevalence (UNAIDS, 2016b). The underlying reasons for high rates of HIV prevalence in this region are multiple. Previous studies have indicated factors such as culture and traditions, low literacy levels, and lack of HIV knowledge as some of the main causes of high HIV prevalence (National Institute of Statistics & ICF International, 2012). Some of these factors can also be linked to HIV prevalence in Cameroon.

According to the 2011 Cameroon Demographic & Health Survey (CDHS), the HIV prevalence was 4.3%. The CDHS shows that HIV prevalence among women (5.6%) is almost double the rate among men (2.9%) (National Institute of Statistics & ICF International, 2012). Biological factors and sociocultural inequalities have been suggested as some of the reasons for these disparities in the HIV prevalence rates between men and women. In Cameroon, the prevalence rate is higher among women living in urban areas (6.4%) than women in rural areas (4.6%). Several reasons account for this disparity, including increased access to communication and social networking and a higher proportion of sex workers in urban areas compared to rural areas. The rural/urban disparities in prevalence rate among women are not reflected among men. There is little difference between prevalence rates of men living in urban areas (3.0%) compared to men living in rural areas (2.7%) (National Institute of Statistics & ICF International, 2012).

The CDHS also shows that HIV prevalence among women was found to increase with increased wealth. The reason for this is not known. There is no clear association between HIV prevalence and household wealth for men. HIV prevalence rates increase sharply with age and peak at age 35 to 39 years for women and age 45 to 49 years for men (National Institute of Statistics & ICF International, 2012). The 35-49 age range falls within the most productive and reproductive period of the human lifespan.

Education has also been shown to be directly associated with HIV prevalence in Cameroon. The CDHS shows that HIV prevalence is lowest among men and women who have had no education. Men with secondary education or above are most likely to be HIV positive and for women it is higher among women with primary or secondary education

(National Institute of Statistics & ICF International, 2012). HIV prevalence is not uniform across the country. Some regions have higher prevalence rates than others. What is interesting about HIV prevalence in Cameroon is the gender factor.

Women in Cameroon, like women in other sub-Saharan countries, are more prone to HIV infection that men because of biological, cultural, and socioeconomic issues including poverty, gender inequalities, and low education levels. The implication of this is that women are more affected by the HIV pandemic than men (GBD 2015 HIV Collaborators, 2016). Considering the focus of my study on MLHIV, this information is relevant because it provides some context for understanding possible connections between women's vulnerability and breastfeeding practices. For example, there might be a link between women's poverty level and their breastfeeding habits (Tomlinson et al., 2014).

HIV and Breastfeeding Practices

HIV infection among women with babies has attracted significant attention from scholars and researchers. Multiple studies have been conducted to understand this risk. It is widely known that breastfeeding when the mother is HIV positive increases the risk of MTCT. Although transmission of HIV from the mother to the child may occur before birth or during delivery, breastfeeding can also cause infants to acquire the virus (Nguefack et al., 2016). Because of this risk, some researchers have recommended that women be taken through highly active antiretroviral therapy (HAART) (Homsy et al., 2010). In some cases, MLHIV may also be discouraged from breastfeeding their infants to avoid HIV MTCT (Zulliger et al., 2013).

The risk of MTCT from exclusive breastfeeding is controversial. Some studies have indicated that the risk of infection is lower when HIV mothers breastfeed their children exclusively than when feeding them with alternatives. In a study conducted in South Africa, Willumsen et al. (2003) found that the risk of MTCT through breastfeeding was dependent on the mother's viral load. Other researchers have come to similar conclusions regarding the lower risk of HIV transmission from exclusive breastfeeding. The controversy in understanding the risk of HIV transmission through breastfeeding implies that certain factors affect the level of risk. Although viral load is a major factor, there are other potential factors that influence how MLHIV breastfeed their babies. However, the focus of my study was not on these risk factors but on the relationship that MLHIV have with their MIL.

Factors Influencing Infant Feeding Behavior

Behavior Patterns of MLHIV

Mothers often determine when and for how long to breastfeed their infants. Despite the recommended exclusive breastfeeding for 6 months, following this recommendation is not always the case among mothers with infants (Chetty, Carter, Bland, & Newell, 2014; Mwendo et al., 2014). For example, in Malawi, the average period of exclusive breastfeeding is 3.7 months, which is almost 40% below the recommended EBF period (Kafulafula et al., 2013). Exclusive breastfeeding may increase the risk of MTCT. In a study on the prenatal intentions of MLHIV in Malawi, Kafulafula and co-workers (2013) established that most mothers exclusively breastfed their infants despite the level of risk involved. The main factors that accounted for infant feeding habits varied, including positive beliefs, mothers' disclosure of HIV status, and maternal education (Kafulafula et

al., 2013). Salient factors that influence a mother's intention to breastfeed exclusively or otherwise include maternal age, place of delivery, maternal education, marital status, and experience with breastfeeding (Kafulafula et al., 2013). Additionally, EBF has been associated with HIV-related stigma, which threatened an otherwise beneficial infant health intervention in Nairobi (Mikal et al.,2016). Both HIV negative and MLHIV reported HIV-related stigma as a barrier to EBF because it has become a practice associated with MLHIV rather than a practice associated with promoting infant health (Mikal et al., 2016).

Male Partners

Several studies have shown that partner support for MLHIV helps improve uptake and adherence to PMTCT interventions including infant feeding. A Kenyan study showed that MLHIV whose male partners accompanied them to the clinic and received HIV counselling and testing were three times as likely to report uptake of Nevirapine (the drug used to reduce HIV MTCT) at delivery compared to MLHIV attended alone (Osoti et al., 2014). A similar study in Malawi also showed an association between increased male involvement, improved uptake of PMTCT services, and enhanced HIV-free survival (Kalembo, Zgambo, Mulaga, Yukai, & Ahmed, 2013).

Studies have shown that the level of involvement of male partners in PMTCT is low, which compromises the appropriate infant feeding practices of MLHIV. Male participation in PMTCT has been shown to be as low as 15% in a study carried out in Uganda (Sarker, Sanou, Snow, Ganame, & Gondos, 2007), and 15% in another study carried out in Kenya (Tweheyo, Konde-Lule, Tumwesigye, & Sekandi, 2010). Given the

key role male partners play in increasing the uptake of PMTCT in general and optimal infant feeding practices in particular, understanding the specific barriers that men face in PMTCT is crucial (Osoti et al., 2014).

Several factors have been identified as key determinants that influence men's participation in PMTCT. In a study carried out in Ethiopia, Tilahun and Mohamed (2015) identified educational levels, geographical access to health facilities, perception of men of PMTCT programs, age, residence, knowledge of HIV, perception of women attending ANC, and the abuse of khat, (an herbal euphoric stimulant) for low men's participation(Tilahun & Mohamed, 2015). The study indicated that male partners who had comprehensive knowledge of HIV/AIDS were almost twice as likely to get involved in PMTCT programs that those who had limited knowledge of HIV/AIDS. These results are consistent with the findings of similar studies carried out in Uganda (Sarker et al., 2007) and Tanzania (Msuya et al., 2006). Male partners with limited knowledge of HIV fail to appreciate the important role they play in reducing transmission from their spouses to their babies. It is likely that the level of involvement of men might be greater in urban areas than in rural areas given the fact that in sub-Saharan Africa in general, and Cameroon in particular, when men attain a certain level of education, they leave rural areas and move to urban areas where there are more opportunities for employment.

Age has also been shown to be strongly associated with men's involvement in PMTCT. Men ages 36 to 55 were shown to be almost two times more likely to get involved in PMTCT programs than those within the 17 to 25 age range. This might be because of

increased maturity and a better understanding of PMTCT among older men (Tilahun & Mohamed, 2015).

Several sociocultural factors have been identified as barriers to male involvement in the PMTCT programs (Osoti et al., 2014). Men tend to perceive antenatal care as 'women's issues'. Those who have poor perceptions of male involvement were almost four times less likely to get involved in PMTCT than men who do not perceive antenatal care as a woman's issue (Tilahun & Mohamed, 2015). This is consistent with a similar study carried out in Cameroon (Nkuoh, Meyer, Tih, & Nkfusai, 2010).

Tilahun and Mohamed (2015), reported that geographical accessibility of health facility was positively associated with increased male involvement in PMTCT programs. Men who live with a distance of five kilometers were found to be more involved than those who live further away. This could be explained by the fact that the shorter the distance to the man's house, the more willing he will be to go to accompany his spouse to the clinic. Increasing access to the health facility could help improve uptake of PMTCT programs and male involvement (Osoti et al., 2014).

While infant feeding habits are primarily determined or influenced by the mother, other people close to the mother may also have some role to play. For example, the child's father may also be involved in cases where the mother is married (Hoddinott et al., 2012). The fathers may be largely involved in child upbringing including feeding decisions and habits. The relationship between the father and mother is therefore a possible influencing factor. If this relationship is good, the father may make some positive contributions in

infant feeding including supporting the wife through the entire breastfeeding period. In a study conducted in Tanzania's Dar es Salam area to investigate the involvement of the male in prevention of mother-to-child transmission, it emerged that male partners' or husbands 'involvement is crucial in determining infant feeding habits. However, this male involvement was limited by several factors including communication barriers between the partners as well as their knowledge about the risk of MTCT (Akarro, Deonisia, & Sichona, 2011). These findings from the study provide a strong basis for believing that the male partners can influence infant feeding patterns. For instance, if the male partners are knowledgeable about the fact that breastfeeding could cause the transmission of HIV from the mother to the infant; they will likely influence their HIV-positive partners to give their children infant formula rather than breast milk. Male partner support, along with health education and counseling, has reported to help MLHIV EBF despite social pressures to do otherwise (Mikal et al., 2016).

The dilemma faced by mothers emanates from a lack of social support especially from their spouses. Although men have been reported to consider the issue of infant feeding particularly breastfeeding as something for women to deal with, they the men are often the breadwinners and as such expected to provide the resources that are needed for optimal feeding of their babies (Kimani-Murage et al., 2015; Nkuoh et al., 2010). Given a scenario where men are the decision makers concerning the availability of money to access health care and food for the child, the choice of feeding is often out of the mother's control. Kimani-Murage et al. (2015) reported that men at times compete for the attention of their babies and will ask their spouses to stop breastfeeding. In addition; men sometimes have

strong opinions regarding infant feeding practices, some of which are not “in-sync” with national guidelines and recommendations.

In yet another study on the involvement of male partners in prevention of mother-to-child transmission based in Uganda, male involvement was linked to several factors including cultural beliefs, socio-economic status, and poor health system (Byamugisha et al., 2010). In one of the findings, the researchers established that the level of education was a major influential factor in men’s involvement in prevention of mother-to-child infection. Those with higher levels of education were more probable to be involved in such efforts compared to those with lower levels of education. With regard to socio-economic status, the study found out that socio-economic challenges hindered them from attending antenatal clinics with their pregnant women. This implies that men who do not attend such antenatal clinics with their women may not benefit from the advice about breast feeding from the health experts. For HIV-positive mothers, this means that such men may not benefit from the advice about the risk of transmission of the virus to the child through breastfeeding.

Socio-cultural factors have also been documented by Nkuoh et al. (2010) as key determinants for the level of involvement of men in ANC. The authors reported that antenatal services in particular are generally perceived as woman’s activity. It is therefore unusual for men to accompany their spouses for ANC and post-natal care services where information on care and support for child growth including appropriate infant feeding is provided by trained health care professionals. Falnes et al. (2011) reported that in most African settings, women typically do not lead and as a result, men would rarely listen to

what the woman has to say. This serves as a communication barrier that hinders effective discussions on issues regarding their children including infant feeding. In addition to communication barriers, Aluisio et al. (2011) have reported that relationship dynamics influence male participation. Marriages, especially co-habitation of partners enhanced male participation in PMTCT. This is because cohabitation fosters stability and facilitates communication. Engagement from both partners encourages joint decisions on the wellbeing of the mother and child.

Several studies have documented interventions that encourage male participation in PMTCT programs in general and subsequently support for appropriate infant feeding practices. Health systems interventions such as the use of invitation letters from health facilities has been shown to be an important strategy to increase male participation male antenatal care services (Byamugisha et al., 2010; Ditekemena et al., 2012). Involving male partners for ANC serves as an important entering point for male participation in the care and support of mothers and their children. When spouses accompany their wives for ANC clinic, the couple has the opportunity to discuss issues regarding the unborn child including infant feeding options and ways of sustaining them. Other health system interventions that have been shown to increase male participation include the provision of voluntary counselling and testing services for HIV.

The place where voluntary counselling and testing for HIV was offered seemed to help men access antenatal services with their partners (Jasseron et al., 2013; Nkuoh et al., 2010). Differential targeting and offering of voluntary counselling and testing (VCT)

services to men who accompany their spouses to the delivery ward also increased men's access to VCT services (Semrau et al., 2005).

Some authors have therefore argued that the role of male partners in PMTCT programs must evolve from one of support for their HIV-infected spouses and breastfeeding women to a much more comprehensive engagement that begins with the prevention of primary HIV acquisition, through the avoidance of unintended pregnancies, and improved HIV/AIDS related care and treatment for the HIV-infected and uninfected women, their partners, and children (Nkuoh et al., 2010).

The Role of Other Family Members

Apart from education from health staff, the father, other family members also influence the infant feeding practices of MLHIV (Mikal et al., 2016; Zulliger et al., 2013). This may be particularly cases where large or extended families live together or in close proximity. In Cameroon as it is the case in sub-Saharan Africa, extended family relationships are very common. For example, in one study on the role of elders in HIV-related fostering in Uganda, Kasedde, Doyle, Seeley, and Ross (2014) found out that many orphaned children are living under the care of relatives. One implication from this finding is that family ties are quite strong and extend beyond the nuclear family in countries such as Cameroon. With such closer and extended family ties, mothers with infants may get support and advice from other relatives including other mothers with experience in child upbringing. These may include sisters, cousins, aunts, and MIL. The advice given to such women as well as support in infant feeding is partly dependent on how the mother relates

with the relatives. If the relationship is good, the relatives may have greater influence on how the MLHIV feeds the infant. To illustrate this, it is important to understand the relationship between the women and their MIL.

MIL are widely considered as important people in African culture. They are respected for bringing up sons and daughters who ultimately marry and add new members to the family. In most countries in Sub-Saharan Africa, married women start living with their men in the latter's' home after being married. As Paulme (2013, p. 71) notes, married women in tropical Africa often have two homes, their original homes and the new homes that they marry into. When married women move in to live with their husbands, they often come into close contact with their MIL. In some cases, this may involve living in the same house, compound or village where contact with the MIL is very common. Depending on how the married women relate with their MIL, the infant feeding and upbringing may vary. For instance, MIL may want to be so involved in infant care because they consider them as grandchildren and hence love them. However, if the MLHIV does not relate well with her MIL, she may be quite protective of the infant by limiting the involvement of the MIL.

Several studies have identified the role that MIL may play in infant breastfeeding patterns. In one such study that was conducted in Southwest Nigeria to identify limitations to exclusive breastfeeding, Agunbiade and Ogunleye (2012) identified pressure from MIL as one of the main factors that prevented women from exclusively breastfeeding their infants. Pressure from the MIL accounted for 25% of the major limitations to EBF. Such pressure included MIL influencing mothers to introduce other foods during the

recommended period of exclusive breastfeeding. MIL may induce such pressure on mothers because of their sociocultural beliefs, previous experiences with infant feeding, as well as their perceptions and lack of knowledge about health infant feeding. In a related study, the involvement of MIL was also found to be a major factor affecting mothers' breastfeeding habits. In this study, some participants noted that the belief or perception that MIL have experience and knowledge on child care influenced them to value and respect the advice they offered regarding infant feeding (DaCosta, 2012). This is quite an interesting finding because it explains why MIL are influential in breastfeeding behaviors of mothers. Apart from the respect that MIL command, they are also believed to possess valuable knowledge and experience in matters of child upbringing because they already have had their own children. The level of influence that MIL can have on a mother's infant feeding habits will also depend on the experience of the mothers. If the mother does not have experience in breastfeeding or child upbringing, she will be more dependent on the advice from her MIL. A different study based in Brazil focused more specifically on the influence of grandmothers on mothers' breastfeeding practices. In this study, the findings confirmed that MIL had some influence on whether mothers' breastfeeding practices especially in determining the period of exclusive breastfeeding and introduction of other foods (Susin, Giugliani, & Kummer, 2005). The mothers involved in the survey reported that MIL advised them to introduce certain alternative foods to their infants or were actually involved in doing so. Just from these three studies, the influence of MIL on breastfeeding habits of new mothers is strongly supported. Although none of these studies

focuses on HIV-positive mothers, the findings are also indicative of the likely reality among such mothers.

Socioeconomic Status

Another major factor worth noting is the socioeconomic status of the women and how this influences infant feeding. Mothers from poor families may have limited options regarding infant feeding compared to those from well-off families. A Uganda study found that stunting, wasting, and underweight infants were highly prevalent as early as 24 weeks among EBF infants born to mothers in the lowest socioeconomic stratum (Eide et al., 2016). In a South African study that sought to examine the impact of pension schemes on child nutritional status. The study revealed that grandmothers who received large pension funds tended to have grandchildren with better nutritional status (Duflo, 2003). This is because such grandparents could afford better diets and care for their grandchildren. Linking this to infant feeding for HIV mothers, it also means that such mothers' infant feeding habits may also be affected by the socioeconomic statuses of their MIL as well as their own parents. For example, MLHIV with infants that live close to their well-off MIL may be influenced on how they feed their infants including for how long they breastfeed them.

Economic status also influences infant feeding for MLHIV especially with regard to making the choice between exclusive breastfeeding and replacement with infant formulas. In a study conducted in Ghana to examine the perceptions of MLHIV and other family members including fathers and grand-mothers, the researchers found that while

infant feeding habits were highly varied, socio-economic status was a major barrier to exclusively feeding infants with breast milk replacements because of lack of affordability (Laar & Govender, 2011). Socio-economic status may be a more pertinent issue for MLHIV because of their status. In most cases, such mothers may not be working because of their HIV status or sociocultural restrictions. This means that they would not be in a position to afford expensive infant formula and hence continue breastfeeding because it is cheap.

The results of a study conducted in Rio de Janeiro explained the social factors that influenced breastfeeding patterns among mothers (Da Silva et al., 2012). The study included 30 women that met certain criteria for participation. From the findings, the researchers identified four major social factors that interfered with or enhanced breastfeeding process among the mothers (Da Silva et al., 2012). These included technological factors, biological factors, cultural factors, and social factors. Under the technological factors, the study identified factors such as duration in intensive care unit, stay and the use of certain technologies including artificial respirator and nasogastric tube (Da Silva et al., 2012). For the biological factors, the identified factors included premature newborn and maternal complications (Da Silva et al., 2012). For the cultural factors, the study identified factors such as family culture as well as breastfeeding culture. Finally, the social factors included family support and support from professionals and other players such as non-governmental organizations (Da Silva et al., 2012). The study's findings imply that breastfeeding culture is influenced by various social factors. From a closer perspective, the findings also show that family support including support from mother, sisters, and

grandmothers can influence how mothers practice breastfeeding. For instance, positive support from family may enhance exclusive breastfeeding especially if the family members understand the importance of it. In the case of HIV-positive mothers, family support to enhance positive infant feeding may involve supporting the mother with resources such as infant formula to avoid breastfeeding that may cause mother-to-child transmission.

The MLHIV-MIL Relationship

Now that there is evidence suggesting the role of mothers-in-law in influencing mothers' breastfeeding habits, it is good to delve deeper into the relationship between the mothers and their mothers-in-law. Understanding this relationship is crucial because it affects how the mothers-in-law influence their daughters-in-law with regard to breastfeeding. Various studies have been conducted on the role of grandparents or mothers-in-law in antenatal care and general health of their sons' or daughters' families. Reviewing some of them will provide important insights in to the relationship of HIV-positive mothers and their mothers-in-law.

A study that focused on the positive and negative effects of paternal and maternal grandmothers on the survival of infants was carried out in Krummhörn. In this study, the researchers established that grandmothers actually influence infant survival (Voland & Beise, 2002). However, the effects vary and can be categorized as either positive or negative. For instance, grandmothers enhanced infant survival in some cases where the infants were between six and twelve months (Voland & Beise, 2002). This positive effect was associated with having good relationships or bonds between the grandparents and the

infants' mothers. From this insight, we can deduce that the nature of relationship between mothers-in-law and HIV-positive mothers influences the role of the former in the breastfeeding habits of the latter. When the relationship is bad, the mothers-in-law may have negative impact or none at all on the breastfeeding habits of HIV-positive mothers. This can be also associated with poor communication and misunderstandings that may prevent the constant contact between them. For example, if the HIV-positive mother has a bad relationship with her mother-in-law, she may choose to move away to a different place where the mother-in-law may not be able to influence her breastfeeding habits.

In another study that involved sons, mothers, and mothers-in-law in Pakistan that was carried out by Kadir et al (2003) sought to establish the role that mothers-in-law play in family decisions. In the study, the researchers observed that mothers-in-law were mainly involved in decisions regarding the number of grandchildren but only played a minor role in other decision areas such as schooling and healthcare. Although the researchers did not focus on the relationship between the mothers-in-law and their daughters-in-law directly, the findings from their study provide some crucial insights. Specifically, the findings suggest that there is a risk of having conflicts between mothers-in-law and their daughters-in-law regarding the number of children. The number of children is a serious consideration for many women especially those who are educated or working. Having many children may not be easy because of the many demands for child care. Therefore, limiting family size through family planning may be a reason for poor relationship between mothers and mothers-in-law. For HIV-positive mothers, getting children is even more sensational because of the additional risks. Such mothers may not want additional children to avoid

these challenges including the risk of having HIV-positive children or orphans. For such mothers, suggestions to have more children may cause bad blood with their mothers-in-law. Assuming that the mothers-in-law are successful in pressuring their sons to have additional children, the HIV-positive mother may find it difficult to accept and expect more pressure from the mother-in-law after giving birth. This may include pressure on breastfeeding practices.

The influence of healthcare providers. Health care providers (HCPs) play an important role in the decision making processes especially those related to infant feeding that takes place in the families of HIV positive mothers. In Cameroon as it is the case in sub-Saharan African, the healthcare worker is often one of the few individuals with sufficient knowledge on HIV to whom the HIV positive mother and her relations can rely on. Infant-feeding counseling by HCPs has been shown to be influenced by several factors. These include psychosocial factors such as HIV stigma and discrimination, confusions resulting from frequent changes in infant feeding guidelines, and their own personal experiences with HIV/AIDS and infant feeding in general HCPs' own personal experiences, and confusion stemming from changing national guidelines (Tuthill, Chan & Butler, 2015). The provision of information to HIV positive mothers within the context of PMTCT programs occurs not only during the antenatal period but also as a continuum of care that is provided by HCPs from pregnancy through delivery to post-partum. As a result, mothers and their relations might be exposed to different HCPs and at times form different health facilities at various stages of the continuum. Tuthill, Chan & Butler, 2015 have reported as sense of frustration expressed by mothers when they receive contradictory and

at times conflicting messages. It is therefore critical to ensure that HCPs provide consistent messages to mothers and their immediate relatives wherever possible. When HCPs receive and provide mixed messages, the confusion that arises leads to constant changing infant feeding practices and in some cases to a lack of trust (Tuthill, Chan & Butler, 2015). The provision of consistent messages will therefore help ensure optimal uptake of appropriate infant feeding practices.

A variety of structural factors interfere with the delivery of effective high quality care, including the provision of thorough infant feeding counselling by HCPs.

High staff workload. Saki et al. (2010) report that healthcare workers are often faced with workload higher than what is expected with some having to attend to as many as 50 pregnant women each day. In addition, these same workers still have to make time for routine family planning visits form mothers and their spouses. This likely leads to stress and burnout. Many women often learn of their HIV status when they come in for the first ante-natal visits. Because of the often long distances between their homes and the health facilities as it is often the case in Sub-Saharan Africa, HCPs are constrained to provide as much information as possible including counselling on infant feeding. This further increases the workload on the HCP and also dilutes the quality of counselling as mothers are provided with too much information during one session. (Buskens & Jaffe, 2008; Leshabari, Blystad, & Moland 2007). It is therefore important to use strategies such as task shifting to address high workload and burnout amongst HCPs.

Lack of adequate equipment and strategies. Tuthill, Chan and Butler (2015) have reported that HCPs often experience a lack of appropriate strategies that are needed to support HIV positive mothers to adopt appropriate infant feeding practices. When confronted with issues of lack of trust between mothers and HCPs for instance which often occurs as a result of conflicting messages from HCP's healthcare workers are at a loss on what to do. This leaves HCP with a feeling of ineffectively supporting their patients further heightening the sense of lack of trust and the creation of internal conflict Tuthill, Chan and Butler (2015).

WHO Infant Feeding Guidelines

In 2010, the WHO revised the guidelines on infant feeding for HIV positive mothers (WHO, 2010). Key changes included the recommendation that national authorities in each country should decide on which infant feeding practice is most appropriate for each country. National guidelines where to choose between breastfeeding with the provision of ART in order to reduce HIV transmission or avoidance of all breastfeeding. The updated WHO guidelines also recommended that in cases where national guidelines promote breastfeeding and ART's, mothers known to be HIV-infected should breastfeed their infants until at least 12 months of age. In addition, WHO recommends that replacement feeding should be avoided unless it is acceptable, feasible, affordable, sustainable and safe. Though the WHO guidelines have provided consistent guidance to ensure optimal infant feeding practices, there is need to identify and address some of the challenges faced with the implementation of these guidelines as detailed below.

Food Security and Breastfeeding

Breastfeeding, particularly exclusive breastfeeding provides the right nutrients the child needs for growth. The WHO guidelines recommend exclusive breastfeeding for the first six months. For a mother to be able to breastfeed her baby, she needs to have access to sufficient food at home. In a study carried out in Kenya, Kimani-Murage et. al., (2015) reported, "there was a general feeling" amongst respondents that mothers did not have sufficient food to eat because of insufficient food in the household. People living in rural areas in Sub-Saharan Africa such as Cameroon rely on subsistent farming. Farm produce and yield are directly dependent on rainfall. In recent years, climatic changes in Sub-Saharan Africa have resulted in poorer yields from the farms.

Breastfeeding After Six Months

Even when the guidelines are clearly understood, socio-cultural barriers hinder the effectively adoption of practices as outlined in the guidelines. Kimani-Murage et al (2015) reported that even when some mothers may be informed about the new recommendation for breastfeeding HIV positive mothers to extend breastfeeding for one year, mothers fear that the child may have developed teeth beyond six months and may bite the mother's nipple during the process of breastfeeding. They are thus worried that the bite might not only lead to infection but may also result increase the probability of HIV being transmitted from the mother to the child.

Working and Living Conditions

Mothers especially those in the urban areas are expected to go resume work after giving birth. This is particularly true for those who are the breadwinners for their families. Kimani-Murage et al (2015) report that women in Kenya work long hours in environments that may not be conducive for carrying babies to work and breastfeeding them there. As a result, mothers leave their children in conditions considered substandard. The children are often left with young siblings without much experience in taking care of children, neighbors or day care centers.

Mothers who choose to exclusively breastfeed their babies are often encouraged to express and store breast milk in order to allow them time to go to work or attend other duties that might keep them away from their children. Studies from African settings including Cameroon have shown the expressing breast milk to feed the baby is not a common practice and also not culturally acceptable (Kimani-Murage et al 2015). Mothers have been known to complain of pain associated with expressing too much milk to store for the baby and also the fact that the breast might not yield much milk (Kimani-Murage et al (2015). Although most African countries including Cameroon have laws in place that safeguard the rights of nursing mothers including allocation of extra time for feeding the children, paid paternal and maternity leave. Unfortunately, these laws are often not respected by employees. For mothers who are willing and able to express milk for their babies, storage is a problem because they do not have facilities for refrigeration. In Cameroon over 46% of the population lives below the poverty line and are not able to afford fridges. In addition, over 55% of the population lives in the rural areas where there

is no electricity. Those living in urban areas are faced with the problem of irregular supply of power to run the refrigerators. As a result mothers resort to leaving breast milk substitutes such as goat or cow milk for their babies. Kimani-Murage et al (2015) report that the psychological bond between the mother and her baby which is expected to result from breastfeeding is often lost because working mothers were reported to have forgotten how to breastfeed because they have stayed for long hours without breastfeeding. As a result, the baby becomes closer to the close relation who is spends more time with her. This might be the grandmother, younger sibling of the mother or the father.

The living conditions have also been shown to affect mothers' ability to breastfeed their babies. In urban areas where accommodation is a problem, members of each household live in one small rooms. Kimani-Murage et al (2015) reported that mothers face difficulties sleeping with their babies on the same bed with their spouses. If the baby cries n the night for lack of breast milk, it disturbs and wakes everyone. As a result, mothers are often forced to prematurely stop breastfeeding their babies at times against their wishes.

Teenage and Single Motherhood

A key barrier to appropriate infant feeding practices is early pregnancy. The challenge for a teenager to appropriately feed her baby is compounded when she is a single mother. Single mothers especially those that are young are concerned about their body look and image (Muko, 2004; Kimani-Murage et al., 2015). In some cases, these mothers are still in school, still looking for fun and often do not have enough time for their babies. As a result, these girls do not initiate their babies to breast milk because they are afraid that

this will mean that the baby will get used to breast milk and keep the young mother away. According to Kimani-Murage et al., (2015) some girls were indicated that they were breastfeeding their babies did not know how to place the baby in a "breast-feeding position". Peer pressure is a key factor influencing infant feeding practices especially amongst young mothers. Kimani-Murage et al., (2015) reported that children of young mothers are feed when their young mothers are eating and often eat the same food as their young mothers.

Misinformation and Myths

African cultures typically have norms that affect feeding patterns in general. Some of these norms and myths coupled with misinformation pose barriers to effective uptake of appropriate infant feeding practices Kimani-Murage et al., (2015). One important example is the perception of people in the North West part of Cameroon on colostrum where the cultural practice is to express it and throw it away because it is considered dirty and not good for the baby. The initial milk is thought to be a cleansing agent for the mothers' breast and as a result is not given to the baby. Kimani-Murage et al., (2015) report that in Kenya most people acknowledge the importance of giving the baby colostrum. However, some people still delay initiation while others don't give it because they are not aware of its significance. Kimani-Murage et al., (2015) report that some people believe that it is just water and would opt for giving the babies artificial food while waiting for the real milk to begin flowing. In some communities in Kenya, colostrum is associated with diseases like leprosy and could cause eye diseases (Kimani-Murage et al., 2015).

Myths regarding the mother's nutrition also pose a challenge to optimal infant feeding. In some parts of the North West part of Cameroon, mothers are given alcohol "Guinness" especially after delivery as it is thought to be a good source for energy. Mothers are also encouraged to take palm wine after delivery. This is believed to precipitate lactation and increase the flow of breast milk. Although studies have not been carried out on the effect of these practices of the health of the babies, it is likely that the alcohol from mothers that is passed across to the young babies through breast milk will negatively affect the health of the babies.

Myths on Exclusive Breastfeeding

Kimani-Murage et al., (2015) reported the perception and believe that a mixture of water and sugar/glucose and Gripe Water protects the babies' stomach. The perception that breast milk alone is not adequate for children has also been reported. Some communities in Cameroon believe that boys need stronger food and as a result, breast milk should be accompanied by artificial food or mashed food such as beans, maize and beans. The same with children born larger than normal (Kimani-Murage et al., 2015). Kimani-Murage et al., (2015) reported the perception of older mothers that breastfeeding the baby for more than six months will make the child to be slow and also result in problems initiating solid food. This is in line with other beliefs that if a child is exclusively breastfeed for long, he or she will be foolish. Consequently, breastfeeding mothers practice early cessation of breastfeeding especially if she wants the baby to start walking earlier (Kimani-Murage et al., 2015).

Other myths related to the mothers health and infant feeding include discontinuation of breastfeeding when the mother is pregnant with another child as this might negatively affect the health of both children, discontinue breastfeeding if one has sexual intercourse with another man as the child might contract a disease and the believe that if one breastfeeds in public, she might be bewitched and this will result in sores on the breast and that breastfeeding the baby after a one day gap may result in diarrhea Kimani-Murage et al., (2015). Identify and addressing these myths through education is needed for optimal uptake of appropriate infant feeding practices.

HIV Related Stigma and Discrimination

Stigma related to HIV/AIDS has been documented as an important factor determines mothers' choice of feed. Muko, Ngwa &Laah (2004) reported that the fear of being identified as HIV positive was a string deterrent to mothers who choose to give their children artificial milk in Cameroon. This is consistent with other studies in Nigeria, Kenya and South Africa. With the onset of HIV/AIDS, initial recommendations that mothers should not breastfeed their babies but only give them artificial milk resulted in communities associating the use of artificial milk to HIV positivity. This perception has persisted. As a result, mothers end up practicing mixed feeding and will give their children artificial milk when there is no one around and give the same child breast milk when in public (Muko, Ngwa &Laah, 2004). On the contrary, a study in Kenya rather reported that people associated exclusive breastfeeding with HIV, because previous counselling on infant feeding from HCP encouraged exclusive breastfeeding and early weaning of babies for HIV positive mothers. As a result, some people tend to choice artificial feed over

breastfeeding including HIV positive mothers in order to avoid suspicion and the resulting stigma and discrimination associated with it.

Fear of Transmitting HIV

The prevalence rates for countries in Sub-Saharan Africa are much higher than other regions in the world. As a result, HIV/AIDS poses a significant health challenge. Studies have reported that mothers are afraid to breastfeed their babies because of fear of transmitting the virus to their children. Kimani-Murage et al., (2015) reported that HIV positive mothers expressed mixed feeding regarding how HIV mothers should breastfeed their babies. Some believed that they should avoid mixed feeding for fear of infecting the baby while others felt that HIV positive mothers should not breastfeed at all (Kimani-Murage et al., 2015).

Unplanned Pregnancies

Unintended pregnancies have been associated with low uptake of breastfeeding. Mothers have been reported to not being able to optimally breastfeed their babies they got pregnant earlier than planned (Kimani-Murage et al., 2015). In Kenya, Kimani-Murage et al., 2015 report that there is a myth that mothers should not breastfeed when they conceive, the challenges that come with pregnancies further make it difficult for mothers to exclusively breastfeed their babies. This poses a significant problem given that breastfeeding is often perceived as a key strategy for family planning in poor households, which rely entirely on breastfeeding to space their children. This is because some mothers perceive modern family planning methods as being harmful. The perceived negative effects

of modern family planning methods include mothers will get fat, the child may ingest the contraceptive through breast milk, a reduction in sex drive and a reduction in milk production. Short term illness and infertility for the baby are also perceived to be potential outcome of the use of contraceptives (Kimani-Murage et al., 2015). Addressing these myths will result in increased uptake of exclusive breastfeeding.

Summary

Cameroon has an estimated prevalence rate of 4.3%, the highest national HIV prevalence in the West and Central Africa sub-region (National AIDS Control Committee, 2010). HIV prevalence varies widely across geographic regions and national demographic groups. HIV prevalence ranges from 2.9% among men of reproductive age (15-49 years) to 5.6% among women age 15-49. The prevalence among young women (15-24 years) is 2.7% compared to 0.5% among men in the same age group. HIV prevalence among pregnant women is 7.8% on average and varies across the country from a low of 4.3% in the Far North region to a high of 12% in the Centre region. The highest incidence rate (45%) of HIV is among stable heterosexual couples followed by professional sex workers, which accounted for 35% of new HIV cases. (National AIDS Control Committee; National Institute of Statistics, 2014). There is global consensus that girls and women of reproductive age are extremely vulnerable to HIV infection, and given the high HIV prevalence among pregnant women, there was an estimated 8,000 new cases of vertical transmission in Cameroon in 2014 compared to 11,000 in 2004). AIDS related deaths among children age 0-14 decreased from approximately 6,400 in 2004 to 4,400 in 2014 (UNAIDS, 2014). There is a large body of evidence indicating that almost all infant HIV

infections can be prevented. The elimination of MTCT is achievable even in resource-poor settings, however the barriers to realizing this goal still need further study in order for them to be overcome.

This study focuses on women in rural Cameroon because they are at higher risk of HIV infection, are more likely to be primary care givers to infants, and in such resource-poor settings are the main practitioners of infant feeding, rearing, and nurture. However, the literature indicates that mothers may not be the sole decision-maker regarding the care of her infant. There are social, cultural, environmental, and economic factors that influence how mothers provide care for their infants. This study endeavors to contribute to the elimination of MTCT, by learning more about interfamilial power dynamics, specifically those between mothers-in-law and MLHIV, in particular regard to infant feeding practices. In patriarchal societies mothers-in-law enjoy significant influence over their sons, their wives, and their grandchildren (White, Dynes, Rubardt, Sissoko, & Stephenson, 2013). Mothers-in-law have been shown to have influence on maternal health behaviors of daughters-in-law, as do husbands and other household members, who also can be barriers to MLHIV practicing medically prescribed health promotive behaviors.

The TPB takes into account socio-cultural norms, attitudes, and beliefs that influence individual behavior and predicting the likelihood of whether or not the behavior is performed or not. In North West Cameroon where traditionally women continue to endure the social and health consequences of gender inequity, self-autonomy and self-efficacy are also limited. The application of the TPB to identify predictors of infant feeding

practices and the mitigating factors of mothers-in-law and other intra-familial issues will serve to inform which predictors can be changed to improve maternal and child health outcomes, additionally results of the study can inform how PMTCT-HIV interventions can be improved and how mothers-in-law can play a vital role in improving community health.

Chapter 3

Research Method

The purpose of this study was to explore and describe the relationships between HIV positive mothers (MLHIV) and their mothers-in-law (MIL) and how this relationship affects the infant feeding practices of MLHIV in rural communities in the North West Region of Cameroon. I used qualitative methods to assess the perceptions, perspectives, and experiences of MIL regarding infant feeding and how they affect the infant feeding practices of MLHIV.

This chapter provides a detailed description of the research methodology including the theoretical framework used to guide the study. I also described the research design, rationale for the design, population for the study, study sample, sampling process, and recruitment procedures. In addition, I described the instruments used to collect data and explained how validity and reliability were ensured. I also included the data analysis plan, a description of the software used to manage the data, and a discussion of the ethical considerations.

Research Design and Rationale

The following research questions guided the study:

1. What role do MIL play in the infant feeding practices of MLHIV?
2. How do MLHIV perceive the influence of their MIL on their infant feeding practices?

3. How can MIL be included in infant feeding programs to ensure optimal infant feeding practices?

An anti-positivism or post-positivism paradigm that uses a qualitative methodology was used for the study. A qualitative methodology was used to understand the phenomenon and to describe what was happening, explain how it was happening, and provide an explanation of why it was happening. A phenomenological design was used to collect information on lived experiences of MLHIV and their MIL. This was needed to understand the relationships between MLHIV and their MIL and how they affect infant feeding practices.

As an alternative, a case study design could have been used to carry out the study. In a case study, the researcher explores a specific phenomenon identified as the case, which is restricted by time and activity, and collects data using a variety of procedures over a specific period of time (Creswell, 1994). Although a case study would have provided a description of the experiences and behaviors of the participants (Patton, 2002), it would have been less effective because the design is restricted by time and activity.

Theoretical Framework

The theory of planned behavior (TPB) was used to guide the study. TPB has been used for predicting as well as understanding infant feeding practices of HIV positive mothers (Kafulafula et al., 2013; Temesgen et al., 2013). The principal concepts of the theory are normative beliefs and subjective norms, behavioral beliefs and attitudes toward behaviors, control beliefs and perceived behavioral control, as well as behavioral intention

and behavior (Icek Ajzen, 2002; I Ajzen, 2010). According to the TPB a person's behavioral intents and behaviors are shaped by their attitude toward the specific behavior, subjective norms, as well as perceived behavioral control (Icek Ajzen, 2002; I Ajzen, 2010). Behavioral beliefs result in healthy or unhealthy attitudes, normative beliefs result in perceived social pressure, and control beliefs result in perceived behavioral control (Icek Ajzen, 2002; I Ajzen, 2010).

TPB was chosen for the study because the framework encompasses most of the factors that might influence infant feeding practices of HIV positive mothers. There is evidence that HIV/AIDS related knowledge on available services, the influence of people around the mother (Muko et al., 2004), perception of HIV, and attitudes toward the disease are determinants of mothers' choice of feeding. In relation to TPB, MLHIV attitudes may be influenced by HIV-related knowledge, perception of the illness, and information on availability of services. These could be explained within the behavioral beliefs and attitudes toward behaviors concept of the TPB. MLHIV choice of feeding has been shown to be influenced by social pressure from those around her (Osoti et al., 2014). The normative belief and subjective norms concept could be used to predict and explain the influence of those around the mother.

Role of the Researcher

The researcher in a qualitative study is the key instrument for data collection and analysis. In a phenomenological study, the research is the investigator, the interpreter, and the analyzer (Creswell et al., 2013). As a result, it is crucial for the researcher to carry out the study in an unbiased manner. I used the following steps to avoid bias.

1. I determined types of bias that may occur during design. Reviewing the research plan and identifying bias that could appear in the form of personal beliefs, biased questions, biased responses, and biased reporting and taking the necessary precautions was critical. Having worked as an HIV counselor and witnessed mothers adopting inappropriate feeding practices, I recognized that I might have been tempted to interpret the respondents' statements based on my knowledge of the current PMTCT program and might have been judgmental in the probing process. To avoid this, I adopted a nonjudgmental attitude throughout the study.

2. I identified limitations of the sample group and included all categories. There were three categories of mothers included in the sample: those who breastfed exclusively, those who gave their children artificial feed, and those who practiced mixed feeding.

3. I treated participants with respect. HIV positive mothers frequently suffer from stigma and discrimination. To prevent displaying any bias, I treated them properly and with respect and avoided pressurizing them in any way to get desired responses.

4. I recording the interview comments manually using notebooks and also via tape-recorder to verify the accuracy of my notes.

The perceptions and perspectives of qualitative researchers are often developed and guided by their personal experiences. The motivation for carrying out this study resulted from my interactions with HIV positive friends and relations who faced challenges with choosing appropriate infant feeding practices and adhering to them. As an HIV counselor, I often provided counseling on infant feeding to HIV positive mothers. While working as

a counsellor, I came to understand that more often than not mothers face other challenges that make it difficult for them to adhere to appropriate infant feeding practices. This understanding of the issues mothers face informed my personal bias on the subject.

The organization for which I work had supported health facilities in the area where the study was conducted. Some of the participants were recruited from recipients of services offered by these health facilities. I did not have any personal contact with the recipients of these health services. The subjects were selected from support groups of HIV positive mothers. To avoid participants feeling pressured in any way, I did not disclose the name of my employer except when there was a need to do so. This happened once after an interview session. I reiterated to the mother who asked where I work that her responses would not in any way affect the provision of services she was receiving from the health facility that my organization had been supporting.

Methodology

Participant Selection Logic

The study population included MLHIV positive mothers with children below 1 year of age living in communities in the North West Region of Cameroon. Participants were purposefully selected from support groups that exist for HIV positive mothers in the targeted communities. These groups serve as entry points for education, peer group support, and assistance from health care providers.

Study participants were purposefully selected. Purposeful sampling is widely used for the identification and selection of information-rich subjects to maximize the use of

resources (Patton, 2002). Subjects are knowledgeable or have experience in the subject matter being studied (Patton, 2002) and are available and willing to participate in the study. Purposeful sampling ensured the selection of HIV positive mothers who were willing to overcome challenges related to stigma and discrimination and were willing to express themselves.

Study subjects were recruited by inviting members of HIV positive mothers support groups. This was done by posting an advertisement on the notice boards of the health facilities in the areas. The support groups usually hold regular meetings at the health facilities. Interested participants were asked to contact me directly by phone or email.

Eligibility criteria. Participants who met all the following criteria were eligible for the study:

- HIV positive adult woman of reproductive age, 18-45 years,
- at least one living child age 12 months or younger, and
- living with or has at least one monthly contact with her mother in law.

Exclusion criteria. Participants were excluded from the study for the following reasons:

- has not reached 18th birthday,
- is not HIV positive,
- is HIV positive but is pregnant,

- is not a mother or her child is over the age of 12 months,
- is unable to allocate 90 minutes to scheduled interview times, or
- cannot participate for health reasons.

A preliminary face-to-face interview was conducted individually to gauge each mother's willingness to describe her experiences. A total of nine mothers were selected.

Recruitment procedures. Three categories were used to select nine mothers. A phenomenological study should include between five and 25 participants (Creswell, 2013). I employed maximum variation sampling to document unique and diverse experiences that might emerge in the study. Three mothers from each of the following three groups were selected:

1. Mothers who exclusively breastfed their babies for 6 months or were practicing exclusive breastfeeding for at least 3 months and at the time of the research planned to breastfeed exclusively for 6 months. It was expected that after breastfeeding for 3 months, these mothers would have sufficient knowledge and experience to contribute to the study.
2. Mothers who provided their children with artificial milk or at the time of the study were giving artificial milk for the past 3 months. It was expected that after feeding their children with artificial milk for a period of at least 3 months, these mothers would have sufficient knowledge and experience to contribute to the study.

3. Mothers who practiced mixed feeding for the first 3 months or at the time of the study were practicing mixed feeding and planned to do so for at least 6 months.

I explained the purpose of the study to the mothers, informing them that their names would not appear on the final report and that any information they provided would be treated as confidential. I explained the requirements and expectations and gave participants consent forms to sign.

Instrumentation

I used an in-depth key informant interview guide (Appendix A) to collect data from the MLHIV. The guide was adapted from a previous study and was based on literature that had been published on the influence of other relations of MLHIV, notably their spouses (Muko, Laah& Ngwa,2004). When developing the instrument, I took into consideration key themes that had been reported in similar studies on the influence of husbands on the breastfeeding practices of HIV positive mothers. These included power relations, communication, access to income and food, peer pressure, stigma and discrimination, need to be in conformity, myths, fear of transmitting HIV, and dynamics of relationship with spouse.

To ensure trustworthiness, I asked heads of the health facilities, who also worked as managers of the support groups for MLHIV, to review the interview guide. These individuals provided suggestions, ideas, and comments on the draft prior to the interviews. This was done to minimize bias and preconceived interpretations of mothers' infant feeding

experiences. In addition, I asked a selected group of experts identified online, who had carried out studies and published articles in peer-reviewed journals on the subject, to review the guide. The purpose of this was to eliminate ambiguous, leading, or stressful questions. In addition, I obtained feedback from my dissertation chair and committee members. The interview guide was translated into Pidgin English (the language commonly spoken in the area) by staff from the language center (SIL). SIL (2012) serves language communities across Africa in building their capacity for sustainable language development by means of research, translation, and training. The guide was translated back into English and compared with the original guide to ensure accuracy. Furthermore, three trail interviews were conducted and the results were compared to identify any errors. Finally, reliability was addressed through detailed notes, a good quality tape recording, and by transparency in note taking.

Procedures for Recruitment, Participation, and Data Collection

The heads of the health centers who are themselves managers of support groups in the area covered by the health facilities were informed of the study. An advert was placed on the notice board of health facilities in the area where the study was carried out. The advert requested that MLHIV with children under 12 months of age who were willing to participate in a study on infant feeding practices should call the researcher's number. The same information on the advert was announced during the area HIV support group monthly meetings. The facilitator used the last five minutes of the meeting to take the announcement. This was done to ensure that mothers who cannot read nor write were not left out of the study. A preliminary interview was organized through phone calls to screen

MLHIV to ensure the inclusion criteria were met and to gauge the extent of knowledge and experience on HIV and infant feeding.

The researcher arranged to meet with mothers who accepted to participate in the study and further explained the content of the consent form to them. Any questions and concerns from mothers were addressed. Mothers who indicated that they understood the content of the consent form, and were willing to sign it and met up with the expectations of the study were enrolled in the study. Specific dates and times were set for each mother at a place that is convenient for the mother. Steps were taken to ensure that the area selected for the interview was free from background noise and that there are no interruptions (Groenewald, 2004).

A team of researchers (three) visited each mother to carry out the interview. The team was made up of the principal researcher (author) and two research assistants (with Masters Degrees in Public Health) who have had prior experience in qualitative data collection in general and interviewing in particular. The two research assistants were primarily in charge of taking notes. Sometime was taken to talk with the mothers and establish a good rapport. The note-takers made comprehensive notes of each interview without being judgmental because data on sensitive issues must be reliable, which is more likely when strong and comfortable rapport is established. The principal researcher posed the questions and facilitated the process. In addition to note taking, the interviews were recorded on tape recorders with the consent of the respondents. In order to avoid challenges

resulting from equipment failure, an extra tape recorder with extra tapes and batteries was brought along.

Open ended questions were used. This was done to ensure that the participants felt comfortable responding to them as opposed to close-ended questions. The first section of the questions elicited demographic information. The individual demographic data helped establish the method of recruitment procedures and variability in the data collected. The second section was designed to collect information based on the research questions. One to one interviews were carried out for a maximum of 60 minutes until saturation was attained. Nash (2014) in a similar study was able to attain saturation after 25minutes. Saturation is used as a tool for ensuring that adequate and quality data are collected to support the study.

Each interview was assigned a code. The example used by Groenewald (2004) was applied. For example, “Participant 1, 25th July.” Numbers were used to differentiate interviews when more than one interview was carried out on the same day. For example, “Participant, 7th April 2016-1.” In the evening of each interview, the research team met to listen to the tapes and crosschecked the notes to make sure that the key information was collected and written down as accurately as possible.

For the note taking process , the observational notes approach as explained by Bailey (1996) where the note-takers wrote down what is being said and what is being observed or 'what happened notes' that are considered important. During the evaluation sessions in the evenings, all the researchers further improved on the data collected with

methodological notes (reminders and further instructions). According to Bailey (1996), these are aimed at deriving meaning to what the respondents said after reflections and discussions amongst the researchers. Finally, at the end of the evening sessions, summary reports that documented the progress of the research were written and stored. Draft transcriptions were presented to the respondents the following day for review and comments.

The data collected was stored in different files. As recommended by Groenewald (2004), separate files; both electronic and hard copies were created for the notes taken on each day, notes or any written documents made by participants, signed informed consent forms, any other information given by participants, draft and final transcriptions and other analytical notes.

Data Analysis Plan

The data analysis process or breaking the data into meaningful parts begin with data "explicitation". 'Explicitation' as defined by Hycner refers to the process of "investigation of the constituents of a phenomenon while keeping the context of the whole" (1999, p. 161). The five steps detailed by Groenewald (2004) for the explicitation process were used. These are "1) Bracketing and phenomenological reduction. 2) Delineating units of meaning. 3) Clustering of units of meaning to form themes. 4) Summarizing each interview, validating it and where necessary modifying it. 5) Extracting general and unique themes from all the interviews and making a composite summary" (2004, p. 17). These steps are detailed below:

Bracketing and phenomenological reduction. In this process, the researchers l temporarily forgot about any questions regarding the existence or non-existence of a particular object and focused only on the experience that they (the researchers) had on the object. As such the researchers suspended judgement and did not take any position on the issue and as such avoided entering the world of the respondent (Groenewald, 2004). This approach facilitated the peeling away of layers of meanings in order to arrive at the true meaning and experience. In order to facilitate the process of bracketing and phenomenological reduction, the researchers reviewed the recordings of the interviews over and over,, familiarized themselves with the words and expressions of the interviewees and got a general picture of what the interviewees were saying before getting into detail analysis (Hycner, 1999).

Delineating units of meaning. According to Hycner(1999), the delineating units process extracts key pieces of information that help throw light on the research phenomenon. This process involves scrutinizing the various units of meaning, taking out what is not important. Key strategies that guide this process include the consideration of significance of meanings by considering the number of times the meaning was mentioned directly or through cues (Hycner, 1999).

Clustering of units of meaning to form themes. The unit clustering process requires the researcher to look through the list of units of meanings, identify links between some of them and separate those that relate with others into different themes (Hycner, 1999). In order to adequately carry this out, the researcher returns to the recordings, listens

to them, compares the experiences of different respondents, separates "overlaps" and identifies the central themes (Hycner, 1999).

Summarizing modifying and validating. The objective of this stage is to obtain a summary of all the themes obtain from the data in order to give holistic meaning to the data collected. Hycner suggests that during this process, the researcher should return to the study respondents to cross-check and ensure that the key points of the interview have been accurately recorded and making any adjustments on the data (Hycner, 1999).

Identifying general and unique themes composite summary. According to Hycner, this step requires looking "for the themes common to most or all of the interviews as well as the individual variations" (1999, p. 154) and then writing a summary of the information from which the themes have been derived (Hycner, 1999). The summary provides a clear interpretation of the words of the respondents using language that can be understood by other researchers.

Vivo was used to manage the data. Although Vivo does not analyze the data it has been reported to, but it is helpful in data management as it makes the process easier and much better organized.

Ethical Procedures

Prior to the commencement of the study, ethical clearance was obtained from the Institutional Review Board at Walden University. The IRB ethical clearance number is 2016 07211733160500. In addition, written agreement was obtained from the head of the health facilities in the area where the study participants were recruited. Signed consent

forms were obtained for each respondents. In addition, verbal consent was obtained and recorded on audio tapes after an explanation of the content of the consent forms. The explanations provided to the study participants emphasized that respondents should feel free to decide not to participate. In addition, they were informed that they could stop at any time or not respond to any question(s) that make(s) them feel uncomfortable. Participants were informed that their names will not appear on the reports and codes will be used to identify them. They were also made aware that any information provided will be treated as confidential and that the information provided will not in any way affect the services they are currently receiving from the health facilities.

Given the high rate of stigma and discrimination in the communities where the study took place, meetings were held in places where the respondents felt comfortable. The data collected was kept in locked files. Electronic data was stored in password encoded files. All the files were destroyed after the final report was accepted. Only the principal researcher (myself) had access to the files.

,,,,Duration of Study

Summary

It is clear that PMTCT-HIV programs were designed under the assumption that women have autonomy over their bodies and by extension choices over their own health-seeking behavior and health care for their children. After a few decades and billions of dollars invested in a broad scope of HIV and AIDS interventions, it is evident that knowledge about HIV and AIDS, building new clinics, and providing ARVs has not been

enough to convincingly ameliorate the epidemic, although it must be acknowledged that progress has been made towards improving access to treatment and care. It is also increasingly evident that eventually stigma and discrimination will become history and taboo. MTCT is preventable, yet each year in Cameroon, alone there are thousands on new pediatric cases of HIV, which indicates that knowledge alone does not directly translate to behavior change. Quantitative studies and surveys inform researchers that sexually active adults know that condoms or abstinence and monogamous relationships can prevent sexually transmitted HIV, but the same surveys show that condom use at last sexual encounter and concurrent sexual relationships are common and acceptable behaviors, especially among men. Studies have shown that women know that it is important to attend ANC at least four times during a pregnancy, yet only a third of pregnant women expected present at first ANC and decreases to one tenth presenting by the seventh month of pregnancy (Cameroon Demographic Health Survey, 2011). A mixed methodology of both quantitative and qualitative tools will facilitate triangulation and give a more comprehensive picture and deeper understanding of the factors involved in the decision-making process of infant feeding practices. The TPB affords the researcher opportunities to learn if, how, and which beliefs, attitudes and norms can be changed, and what the process of change might look like, who would benefit and would the change be acceptable by the community itself? The MLHIV and their MIL through in-depth interviews, focus group discussions using grounded theory, best address these questions.

Chapter 4

Results: Analysis and Interpretation

The purpose of this study was to explore and describe whether or the extent to which mothers-in-law (MIL) influence infant feeding behaviors of MLHIV. Qualitative methods were used to assess MIL's perceptions, perspectives, and experiences on infant feeding and how they affect the infant feeding behaviors of MLHIV.

This chapter contains a description of the demographics of the participants. The procedure for data collection is also included as well as detailed information on how the data were analyzed. Evidence to support trustworthiness of the data collected is provided followed by a detailed description of the results. This chapter ends with a summary of the results of the study.

Settings

The participants were MLHIV who were considered to regularly communicate with their MIL by either seeing or speaking with their MIL at least once every week. The living relationships of the MLHIV greatly influenced the relationships between the MLHIV and their MIL. In two of the three communities in Boyo, where some interviews were conducted, it is customary for young mothers to live in close proximity to their MIL during the first few years of marriage. In addition, the men typically travel to the southern regions of the country in search of work and only come back during the last few months of the year. As a result, married women end up living with their MIL for longer periods. Four of the nine mothers were living with their MIL. These MLHIV either stayed in the same house

or same compound with their MIL and other relatives. The MLHIV had their own rooms, but some shared the kitchen and sitting room with their MIL.

All of the MLHIV and their spouses were HIV concordant. Each participant disclosed that she and her spouse know that the other was HIV positive; however, I did not determine which spouse infected the other or whether either spouse was infected by the other. Only two MIL knew that their son and spouse were PLHIV.

Demographics

Table 1 below displays select demographic information on the MLHIV participants. Each participant was assigned an identification number between 1 and 9. Data collected included age of MLHIV, occupation, number of years of formal educational, number of children, age of infant in months as of July 2016, and the MLHIV infant feeding practice. The data indicated that 56% of MLHIV were between 20 and 25 years of age. One third of the MLHIV were housewives or stay-at-home mothers. Their years of formal education ranged from 7 to 16. The infants ranged from 1 to 3 months and the mean infant age was 5.3 months.

Table 1

Demographic Profile of Participants

Participant ID	Age	Occupation	Years of Education	Nº Children	Age of infant (M)	Infant Feeding Practice
P 1	28	Nurse Assistant	12	1	6	EBF
P 2	32	Trader	7	2	7	EBF
P 3	22	Housewife	12	3	5	MF
P 4	24	Housewife	7	1	9	MF
P 5	23	Housewife	7	1	5	EBF
P 6	24	Farmer	7	2	4	MF
P 7	31	Trader	12	1	4	AF
P 8	30	Social worker	15	1	6	AF
P 9	25	Teacher	16	2	6	AF

Note. EBF= Exclusive Breastfeeding, MF= Mixed Feeding, AF= Artificial Feeding.

Data Collection

A total of nine participants were interviewed. The participants chose the locations for each interview. Four interviews were carried out in selected rooms in different health facilities where privacy could be ensured. Three interviews were carried out in abandoned buildings. Two participants preferred to be interviewed at home during periods when no adult was around. I explained the need for privacy and helped to ensure this. For example, one of the windows in the office where the interview was carried out was padded with wooden material to ensure that people passing outside would not be able to hear the

conversation. Each interview took between 42 and 56 minutes. Each participant was initially interviewed once. In one case, follow-up questions were asked by telephone.

The data were recorded using notebooks by two research assistants. All interviews were audio-taped using tape recorders. There was no variation between the original plan described in Chapter 3 and the actual data collection process.

Data Analysis

The written and recorded data were read and listened to multiple times. I reflected on the conversations and focused only on the experiences based on what I had heard and read without thinking about my personal experiences. This was in line with the bracketing process for phenomenological research (Groenewald, 2004). I went back to the transcripts and reread them and listened to the tapes again several times to familiarize myself with the words and expressions of the interviewees and get a general picture of what the interviewees were saying. I then proceeded to identify units of significant meaning by considering the number of times the meaning was mentioned directly or through cues.

I then clustered the units by looking through the list of units of meaning, identifying links between some of them and separating others that related to different themes. During this process, I returned to the recordings, listened to them again, and compared the experiences of different respondents to separate overlaps and identify central themes. Next, I convened a meeting with the research assistants, and we spent another day going over the tapes and transcripts to validate the units I had identified and the central themes.

I reviewed the emerging themes for each interview question and clustered the elements into major themes. Over 26 expressions were categorized for the nine participants, revealing significant similarities, patterns, and commonalities. Many themes emerged through analysis of the interview data. Data samples are presented verbatim in this chapter as they were transcribed from the audiotaped interviews. Participants shared their unique lived experiences of their relationship with their MIL.

The subunits and emerging themes are presented in Table 2 below.

Table 2: subunits and emerging themes

Research Question (RQ)	Subunits	Theme
RQ1) What role do MIL play in the infant feeding practices of MLHIV?	Different options	Concern for infant's welfare
	Infant's preference	
	Fear of baby becoming infected	
	Fear of MIL feeding baby with something else	
	Lonely	Emotions and feelings of loss
	Isolation	
	Shame	
	Indifference	
	Fear of disclosure	
RQ2) How do MLHIV perceive the influence of their MIL on their infant feeding practices?	Self/ perceived stigma	
	Stigma from husband's relations, neighbors, and friends	

	Old ways	Cross-generational conflict
	Tested methods	
	Awareness	Mothers determination to adhere to what they feel is best
	Previous experience	
	Financial empowerment	
	Convenience	
	Coping mechanisms	
	Fear of being sent away	Pressure to conform
	Rely on husband/in-laws for food	
	Importance of having a good relationship	
	Respect for MIL	
	Information of current guidelines	
RQ3) How can mothers' in-law be included in infant feeding programs in order to ensure optimal infant feeding practices?	Financial and material support	MLHIV expectations of MIL
	Advice	
	"Hands off" regarding feeding of the baby	
	Support	MIL concern for infant's welfare
	Encouragement	

Evidence of Trustworthiness, Validity, and Transferability

The following steps were taken to ensure the credibility of the study.

As an indigene of the North West part of Cameroon where the study was carried out, I was familiar with the culture of the people. Lincoln and Guba (1985) recommended contact with study participants prior to the implementation of a study. Participants were contacted by phone. Face to face meetings were held with each participant. In addition, I read several articles to increase my understanding of cultural practices regarding maternal and child health of the people of the North West.

The study participants were selected from three communities that were randomly selected out of a total of 38 communities. Random selection ensures the distribution of influences that might not have been identified or known (Jensen, 1973). Through random sampling, there is some degree of certainty that those selected are a representative sample of the target population.

During the interview, I used several tactics to encourage honest responses. These tactics include creating rapport to facilitate a free and open discussion, giving participants the option of refusing to participate, allowing participant to not answer questions when they do not feel comfortable doing so, and informing participants that there were no right or wrong answers (Shenton, 2002). Probing and iterative questioning techniques was frequently used.

The research team was made up of a graduate student in public health from the University of Buea and an MPH graduate from the University of Edinburgh in the United Kingdom. The write analysis of results was reviewed by an MPH graduate from London School of Tropical Medicine. A PhD and Fulbright scholar from the University of Yaoundé, Cameroon also provided feedback. The team had a lot of experience in qualitative research methods. Several meetings took place during the interviews and during the data analysis process. I received a lot of feedback and help from this team. In addition, there were frequent discussions especially during the evenings after each interview to ensure accuracy of the data transcription and analysis. The checks took take place among the researchers and also between the researchers and participants.

To facilitate an understanding of the extent to which the results of the study could be transferable, I provided a detailed description of the methods. This will enable readers to not only gain a better understanding of the context but to also make comparisons with results from other studies. This study may be replicated in similar contexts.

According to Shenon (2012), providing sufficient detail on the study design and data collection process facilitates assessment of the study and the effectiveness of the method of inquiry.

Results

Research Question 1: MLHIV-MIL Relationships

The relationship between MLHIV and MIL regarding the feeding of the child ranged from cordial and supportive to distant and uncaring to tenuous and conflict ridden.

Two key themes were mother's concern for the child's welfare and emotions and feelings of loss. These themes are described below, including data samples from interviews.

MLHIV concern for infant's welfare. A key theme on the relationships between MIL and MLHIV was the concern MLHIV had about the well-being of their babies. The concern about the welfare of their babies played a central role in how MLHIV related with their MIL.

Participant 2. Her MIL lives in the same town (about six kilometers away), and they meet and communicate every week. Her MIL also visits her home on a regular basis (about once every two months). Her baby is now over 6 months and has stopped exclusive breastfeeding, and she is now giving the baby solid food. She says whatever she feeds her baby depends on the baby's "system" (taste and desire) irrespective of what her MIL says. If the baby's system agrees with it, she will go ahead and give the baby that food; if not, she would avoid that food. She has noticed, for example, that the baby prefers salty foods to sweetened foods. She does her best, therefore, to cook foods for the baby rather than give ready-made baby food that is sweetened.

Participant 2 reported that "My MIL insisted that during the weaning period I should give a combination of soya bean powder mixed with rice and dry fish while breastfeeding and gradually reduce the frequency of breastfeeding and finally stop after three months. But my baby doesn't like soya bean. I cannot force her because she will cry."

Participant 4. She lives with her MIL and she is very concerned about the welfare of her baby that she would carry her about everywhere for fear that someone especially the

MIL could be tempted to feed her with something else. The baby was on exclusive breast milk for six months. She says does not trust anyone to take care of the child as she would.

'I would carry the baby about with me even if her father is at home. Sickness will not stop me from carrying my baby around'.

Participant 5. She lives in the same compound as her MIL. Her baby is five months old and is on exclusive breast milk. She knows that introducing other food while breastfeeding is dangerous for the baby's health so she has refused to take her MIL's advice to give the baby other food no matter how much her MIL insists. She goes about with her baby everywhere because she is worried that if she leaves the baby with her MIL she could give her food when she cries.

Participant 6. She communicates on a weekly basis with her MIL who visits her every month. She breastfed her baby exclusively for three months and then introduced mixed feeding. In spite of the tremendous pressure she was under from her MIL to feed the baby with solid food during the first three months of her baby's life when she was breastfeeding exclusively, she did not give in. She knows that giving the baby breast milk and other food is dangerous for the baby's health therefore, she decided against feeding practices that could hurt the baby. She says, 'no matter what people say, I can never give the baby what I know could hurt her, some of the things my MIL has suggested are not healthy, why should I give my baby things that I know may not be good. If I mill the crayfish and add it to the baby's food and the tiny particles happen to give her a sore, will it not be easier for the HIV to pass through when I am giving him breast milk?'

Participant 8. Her baby is eight months old and she has decided to give the baby formula exclusively for six months. Although it would have been less expensive to give the baby breast milk exclusively for six months, she chose to give formula because her CD 4 count is very low and she wants to minimize the chances of her baby being infected with HIV from breastfeeding. She stated:

"I took the decision to give my baby only bottled milk because I want to avoid any chance of her being infected by the virus. My MIL is not happy about this. But I cannot take the risk of giving her breast milk."

Emotions and feelings of loss. Participants expressed feelings of shame, fear, loneliness and isolation when describing their relationships with their MIL. These are detailed below:

Participant 1. She feels ashamed when confronted by her MIL as to why she will not leave the baby alone with her (the MIL) even for a few minutes.

"I do not know how I found myself in this situation, I feel so ashamed even to begin to explain to people including my MIL why I have to always carry my baby around and make sure that nobody feeds her with something else. The worst part is that not being able to talk with someone else makes me feel lonely. When I hear how people talk about other HIV positive people, it makes me feel like crawling into a hole and hiding".

Participant 2. When discussions regarding HIV/AIDS come up between her and her MIL, she keeps silent and would rarely say a word. She avoids this topic of discussion with her MIL.

"I am so scared that someday she (MIL) will find out that I am HIV positive. That would be the worse day of my life. If my friends get to know about this, I am finished".

Participant 4. She initially blamed her husband for being responsible for her illness and her MIL for siding with her husband. She felt that her MIL would have cautioned her husband against high risk behaviors.

"Initially when I was told that I am HIV positive, it came as shock and my world fell apart, I was ashamed, I hated my husband and I hated my MIL as well for always siding with the things her son does. Whatever he does it is okay with her. She is a woman like me and I thought she should be on my side but that is never the case".

Participant 5. The quality of her relationship with her MIL could improve if she was able to disclose her status to her MIL. She cannot disclose because of fear and shame.

"It is likely that if I were to disclose my status to my MIL she might be more supportive. But I am also afraid that her reaction might be the reverse. I also feel so ashamed to even begin the discussion".

Research Question 2: MLHIV Perception of MIL influence on Their Infant Feeding Practices

These results show significant variations in the ways mothers perceive the influence of their MIL regarding the infant feeding practices of their children. MLHIVs were often pressurized directly or indirectly to conform to norms or listen and adhere to what their MIL were telling them. While some MLHIV perceived their MIL influence as being supportive, others experienced perceived stigma and discrimination. The different perceptions were shown to emanate primarily from cross-generational conflicts and MLHIV determination adhere to what they (MLHIV) felt it is best for their infants. As a result, MLHIV develop various pre-emptive coping strategies to deal with potential or actual adverse situations.

Pressure to conform. Pressure to conform to societal norms was a recurrent theme throughout the interviews. MLHIV were expected to respect their MIL. This respect includes listening to and complying with advice from their MIL. MLHIV reported being worried that their MIL can influence their spouses to send them away from their homes if they did not have a good relationship with their MIL. MLHIV who depended entirely on their spouses or MIL for food were especially vulnerable to pressure.

Participant 1. "When my MIL ask me to give something to my child that I know is not good for her, I would tell her that I will out of respect for her but I will not do it if it is not right. Some of the things she wants me to do are not the same with what the nurses are saying in the clinic. I have to make sure I have a good relationship with her at all cost

especially given my health situation (HIV status). If she says bad things about me and my husband sends me away where will I go to?"

Participant 3. She gives her five-month old baby breast milk as well as baby food. Although she is aware of the vertical HIV transmission risks posed to her infant by practicing mixed feeding, she practices mixed feeding because she feels that her breast milk output is not sufficient to satisfy the infant. She makes sure to prepare the food herself to reduce any chances of the baby getting sick because of contaminated food. She stated:

"if I did not have serious financial constraints, I would have liked to give my baby only artificial milk for six months. I know it would have been difficult to only feed on artificial milk because of what people around me including my MIL would say. Right now she thinks I am a bad woman pretending that my milk is not coming out. I have to respect her otherwise my marriage will not be in harmony, she is my MIL I have taken several herbs in order to increase the flow of my milk in order to satisfy her to no avail. When she is around I try to make sure that she sees me breastfeeding".

"Initially I started off with exclusive breastfeeding when the baby was not yet one month old, when I was giving him only breast milk, my MIL kept saying that the baby was not eating enough because he was crying too much. In spite of the pressure to give my baby food at that time, I could not tell her my status and give her an explanation for my choice of feed."

Participant 4. She had the choice whether to live with her MIL or her mother after her husband's death. She chose to live with her MIL out of respect for her. She thought

that leaving her MIL's home after her husband's death would have been disrespectful. She says although her MIL blames her sometimes for her HIV status, she will continue living with her out of respect for her. As a consequence, she is obliged to listen to what her MIL says and at times chooses to comply, even if it is not correct.

Participant 5. 'I will never speak rudely to my MIL no matter how much she insists about something concerning the baby. I respect her a lot because one has to respect her MIL otherwise there will be fire at home'.

Participant 6. "If not of that woman (MIL) I would not have combined breast milk and canned milk for my child. She was all over the place telling people that I am not a good wife because I said I wanted to give my baby only canned milk. The worst part is that my husband believed in her so I had to do it (give my child breast milk) in order to keep my marriage intact.'' "if my child ends up contracting the virus I will never ever forgive her".

Participant 7. "My MIL thinks and says that I am a bad mother because I am only giving my baby artificial milk. I cannot tell her the details because I know what the outcome will be. She has complained to everyone in the family. Thank God that my husband is on my side, otherwise I do not know where I would have been today."

Participant 8. "Each time I was seen giving my baby artificial milk, people raised eyebrows, they suspected that I am HIV positive, but I could not tell them because I felt ashamed. I know it is not my fault but I cannot help feeling otherwise. At times I feel like I am alone in the world except when I am in the support group meetings."

Stigma and discrimination. Perceived stigma and discrimination was a recurrent theme during the interviews. Stigma was either perceived or expressed by relations and MIL'. This is a major reason for the non-disclosure of their HIV status to their MIL and other family members for that matter.

Participant 1. "I know only one lady who is a member of our support group who has told her MIL her status. None of the others including me have done this. We fear that our status will be used to insult us. Also, I cannot tell them because they will see me as though I am finished. They will say it is witchcraft. I know this because I have seen the way they have treated other people in my situation."

Participant 4. Her MIL gets angry with her sometimes when she asks for soya beans for the baby's food. She also blames her for her HIV status and sometimes rubs her situation in her face. She stated:

"She has called me names at times but there is nothing I can do."

Participant 5. Her MIL continuously tells her to give the baby other food even though she is breastfeeding exclusively. Whenever the baby cries after being breastfed, her MIL would tell her to give the baby food. She says, 'her continuous talking about this worries me but I try not to let her notice that I am worried'. She also says, 'if my MIL was aware of my HIV status, I know she might advise me differently. Unfortunately, I cannot disclose my status because she might advise my husband to send me away. I am also afraid she will spread news about my status to the whole family and people will be looking at me as though I will soon die'.

Participant 6. Her MIL keeps complaining about the baby's frequent crying. She tells her that it is as a result of her light breast milk therefore, she needs to give the baby more food.

"There is no way I can tell her my HIV status. If my husband wants to, he should go ahead and tell her, not me. I know that the minute she knows things will be horrible for me and my child."

Participant 7. "The few times I have visited her, when I touch anything in her house, she avoids touching it or she uses a cloth to hold it. Regarding the feeding of my child according to her, my child is also HIV positive since I am HIV positive. She once said that she does not know why I am wasting my time with a child who is already also ill like me."

Participant 8. Her MIL cannot understand why she has chosen to give her baby exclusive formula for the first six months of the baby's life. She is always asking if she would be able to afford to feed the baby exclusively with formula for that long. She says her MIL often berates her by making comments to her like:

"You chose this, so you will do it yourself. Don't just count on me. You stubborn girl!"

"If they know they will call the children living corpses. They will go about saying that the children will not live for long and of course they will insult".

MLHIV determination to adhere to what they feel is best. In spite of the concern the MIL show towards the breastfeeding patterns of their grandchildren and the suggestions they make, the interviews show that the participants would not comply with suggestions that they were not sure were good for the baby's welfare no matter how compelling the suggestions were. In feeding patterns for babies, some of the participants follow the same infant feeding practices on their current infants that had worked on their previous infants, and do not necessarily comply with what their health care providers advised.

Participant 1. She revealed that she had been informed at the hospital that feeding the baby exclusively for six months is best for the baby.

"I would only take good advice from my MIL. I will not take advice that is not like what I have heard from the hospital. For example, I have heard that I should give my baby only breast milk for six months, that is what I will do. My milk is flowing well and it is easy for me to give it to my baby so why should I change?"

Participant 2. Implementing her MIL's advice with regard to the feeding of her baby will depend on whether or not what she asks her to give her baby is good for the baby's system. She said she will never give her baby any food that does not agree with the baby's system. But she also stated:

"if it is what is nutritionally good for the child, I will be forced to give her, whether my baby likes it or not. Prior to the sixth month, my MIL was insisting that I mill solid food and give to the baby. I can't do this because I know that it will increase the risk of

HIV infection. This is the second child I am having, I gave the first one only breast milk for six months and she is HIV free, why should I change the method of feeding this one?"

Participant 3. She does not breastfeed her five-month old baby exclusively. She also gives her baby food made from corn locally known as 'pap'. She says that although she would have loved to breastfeed exclusively but cannot because she does not always have enough to eat and produce plenty of milk, she still is not worried about this pattern of feeding her baby because she did the same with her first baby who is a very healthy toddler now. She stated

"I followed my MIL's advice and added artificial milk to breast milk when my first baby was only a few months old because my breast milk was light. It did not hurt her, it rather worked for her. Therefore, I am confident that this method of feeding will work for this baby".

She disclosed that though there are some suggestions that her MIL makes that she can implement with regards to the baby's feeding but will not do anything that she had not been advised by the hospital to do. She also says;

'if I am not very sure about something my mother-in-law says concerning the baby's feeding, I will not go ahead and do it. I will call my nurse first to find out her own position'.

Participant 4. Although she respects her MIL and considers some of her suggestions very good (like the fact that she asked her to always put soya beans in the

baby's food), she will still not take just any suggestion. For example, when her MIL told her to take Guinness beer after delvery and to always take palm wine because Guinness will give her strength and palm wine will increase the flow of her breast milk, she had refused, saying the doctor had advised against it.

Participant 5. She says her MIL's insistence that she should give the food other than breast milk although she is not yet six months is worrying yet she will stick only to what the doctor said.

"The nurse in the clinic said it is better to give the child exclusive breast milk for six months, I breastfeed the older one for six months and she is not having HIV, so I am confident that this child will also not have HIV."

Participant 6. She stopped exclusively breastfeeding her baby at 3 months of age instead of the 6 months as advised by the doctor because she thought that breastfeeding the baby for a long period could increase the baby's risk of being infected. She said;

"I breastfed my first child exclusively only for three months. From the 4th month I started giving him other food and no breast milk. He is now 6 years old and has been tested negative for HIV. Seeing this good result, I have decided to do the same for this baby".

Participant 7. 'My MIL says I should give the baby breast milk in addition to the artificial milk. Out of respect for her, I never argue what she says but I know what I should do. She said she will tell my husband not to pay for the milk but I don't care because I have money to buy it'.

Participant 8. 'If my MIL asked me to breastfeed my baby and also give artificial milk, I would not do it because I would be putting my baby at risk of getting the disease. Even my husband knows that I cannot change my mind and I am capable of paying for the milk'. 'Because of my job it is easy for me to leave the baby with the baby sitter with instructions of how to prepare and give the milk. This is very convenient for me".

Cross-generational conflicts. Conflict is another theme that stands out clearly from the transcripts of the discussions held with the participants. Conflict was primarily between old methods and contemporary methods of feeding babies and conflict between MIL and MLHIV resulting from differences in opinions as a result modernity.

Participant 1. Her MIL tells her; '*give the baby whatever everyone else is eating just like we did in those days*'. She totally disagrees with her MIL and will give the baby only breast milk during the first 6 months. Even when the baby will begin to eat solid food, she would not give her what everyone else is eating like her MIL suggests.

"when I did not heed to my MIL's advice to feed the baby with baby food because she was still crying a lot after being breastfed, my MIL told me that "in our days, we gave the baby food right from the maternity ward'".

Participant 2. Her MIL expects her to breastfeed the baby for two years as it was done in the past. The MIL recounts

‘I breastfed your husband until he was 2 years old, why can’t you do the same. You people of this generation are lazy and can feed your children well that is the reason why so many young men are dying’.

She respects her mother-in-law’s views but disagrees with her on them. She breastfed her baby until she was 6 months old and she would continue with baby food.

Participant 6. Her MIL asked her to include other solid foods including concoctions from native doctors that have traditionally been shown to improve the baby’s nutritional status even when the baby is not ill. When she did not comply her MIL told her that these days, young mothers depend solely on the information they get from the doctors unlike in their days. This is wrong according to the MIL. The doctors and nurses do not know age long traditions that have ensured increased survival of children and longer lives for people in the communities. According to the MIL

*“*Doctors learn from the white man’s books and the white man’s knowledge and skills cannot apply to the Blackman’.

Participant 8. When her MIL learned that she was planning on feeding the baby only artificial milk for the first 6 months, she remarked,

‘you the young people these days, you come in with new ideas and it is these new ideas that are making things worse. What kind of a woman will not give her baby breast milk?”

Coping mechanisms. The non-disclosure of their HIV status by some of the participants resulted in them being under pressure from their MIL to feed their babies in ways that could be detrimental to the health of the babies. In order not to give into the pressure, the participants have come up with ways to get by. These strategies included tolerance, lying, and deceit, ignoring their MIL and getting their husbands to speak to heir MIL on behalf of their spouses.

Some participants cope by accepting that the pressure will always be there. They have learned to live with the fact that their MIL will continually ask why they insist on exclusive breastfeeding for 6 months when the children could eat other food. For example;

Participant 2. Although her MIL's continuous talking about the baby's crying is very worrying, she has no choice but to quietly bear it for the sake of the baby's health.

Participant 5. Learned to accept and deal with the much talking and many questions from her MIL and others about her baby's constant crying after being breastfed when he was still on exclusive breast milk.

Other participants have learned to cope with the pressure by lying. For example

Participant 7. 'when my MIL keeps asking me why I don't give the baby breast milk even when he is crying too much, I simply tell her that it is not yet time for the baby to be breastfed'.

Participant 8. When her MIL asked initially why she was giving a newborn baby formula instead of breast milk, she told her that the breast milk was not flowing well. As

time went on and the MIL found out that the baby was still on formula and not breast milk, she began to question. To stop questioning, the participant told her that she prefers to continue with formula for the baby because she started with it and the baby is now used to taking formula milk.

Participant 3. She disclosed that though there are some suggestions that her MIL makes that she can implement about the baby's feeding but will not do anything that she had not been advised by the hospital to do. She also says;

'when she persists in asking questions, I call the nurses in the clinic to call her (my MIL) and tell her that the nurses are on board with the way I am feeding the child'. 'When the questioning becomes too much, I ask my husband to talk to her. This usually helps except that at times he (her husband) is on her (MIL) side and I feel left alone and frustrated'

Other participants have learned to cope with the pressure by lying. For example

Participant 7. Her MIL refuses to help her with food stuff even when she her MIL has. She would rather send the food to her daughter. She always tells the MLHIV that when she was in her husband's house her own MIL did not help her so she will in turn not help her. The participant also says, 'our arguments were so rampant that my husband had to build another apartment for me in the compound so that I would not live in the same house with her and endure all her talking'.

'when my MIL keeps asking me why I don't give the baby breast milk even when he is crying too much, I simply tell her that it is not yet time to the baby to be breastfed'. "At times I just ignore her, she will talk and get tired of talking and keep quiet"**.**

Participant 8. When her MIL asked initially why she was giving a newborn baby formula instead of breast milk, she told her that the breast milk was not flowing well. As time went on and the MIL found out that the baby was still on formula and not breast milk, she began to question. To stop questioning, the participant told her that she prefers to continue with formula for the baby because she started with it and the baby is now used to taking

Participant 9. "Where I am now I really do not care; she is a wicked woman. I will be filing for a divorce. The pressure is too much and I cannot take it anymore".

Research Question 3: How Can MIL be Included to Promote Optimal Infant Feeding Programs?

In order to answer the question on how MIL can be more supportive of MLHIV it makes sense to first identify if there are any expectations of MLHIVs from their MIL which if provided will improve on the infant feeding practices for the children. Several units were identified under the theme "MLHIVs expectations from their MIL". The transcripts of the study also show that any support provided by MIL was primarily as a result of the concern they (MIL) had for their grand children. These two themes are discussed below.

MIL concern for infant's welfare. Generally speaking, with the exception of two cases MIL's were reported to exhibit a great deal of interest and genuine concern about the

feeding patterns of their grandchildren, albeit in varying degrees. This concern for the child's welfare was exhibited by increased show of support and attention for the feeding of the child.

Participant 1. Although her MIL is very old and lives in a village away from the MLHIV and grandchild, whenever she gets to talk on the phone with the participant, she will always ask about the health of the child.

She recounted that

"She (MIL) often tells me to make sure to give the baby everything that everyone else is eating. She believes that in doing so, it will help the baby to grow stronger".

Participant 2. The MIL lives in the town about six kilometres away from her grandchild but she speaks with the MLHIV on a weekly basis. She always wants to know whether the baby is eating well and always tells the MLHIV to make sure to breastfeed the baby for two whole years that she did with her own children.

Participant 3. Her MIL often makes suggestions about the babies feeding. She had advised the participant to give her first baby artificial milk because the flow of her breast milk was not sufficient. With the current baby who is 5 months old, the MIL has encouraged the introduction of baby food and supports the mother financially so that she can ensure that the food is available because like with her first baby, the breast milk is inadequate.

Participant 4. The MIL constantly asked if the hospital gave any particular advice about the feeding of the baby. She was always telling the participant to go to the hospital to find out what changes should be made to the baby's feeding at 6 months of age. She also told her that exclusive breast milk is good for the baby during the first six months because combining breast milk with other food will make the baby vulnerable to infection because her system is not yet very strong. Now that the baby is 9 months old and is no longer on breast milk, she has given the participant a pot in which to cook only the baby's food. She does not want the baby to eat what other people are eating. She says that if the baby's food is cooked separately, it will be made to be very nutritive. She has told the participant to always use soya beans to prepare the baby's food.

Participant 5. The MIL is concerned about the baby's persistent crying. She has advised that although the baby is not yet 6 months old, she should be given baby food. She is concerned that the baby may not be eating adequately.

Participant 7. Her MIL had always insisted that she should give her baby solid food even when the baby was as young as two months. Her MIL says the artificial milk is very light and cannot satisfy the baby.

Participant 8. Her MIL is concerned that her four months old grandchild is on exclusive artificial milk rather than on breast milk. She worries that the MLHIV might not be able to continually afford the relatively expensive artificial milk, which will lead to her grandchild not being properly fed.

MLHIV expectations of MIL. MLHIV have expectations regarding the role of their MIL regarding the feeding of their children ranged from the need for constant support and encouragement to outright rejection of any support or advice. The expected support included constant advice as a show of concern, food assistance, acceptance and financial support.

Participant 1. She wants her MIL to show more concern about the baby's wellbeing. She wishes that her MIL would send food stuff like corn so she can prepare the baby's food when it will be time for the baby to eat solid food. She says *'she should not send the food because I cannot afford it; I just want her to show more concern'.*

Participant 2. 'I would like my MIL to advise me on what to give my baby so she can be healthy'

Participant 3. 'I would be grateful if my MIL could give me some money to improve my business so that I can get enough money to eat properly and so breastfeed my baby well'.

Participant 4. 'I would really like for my MIL to assist me financially for the baby's feeding. She knows my status and knows that certain feeding practices are risky for the baby. But her knowledge cannot help me if there is no financial means to put what we know into practice especially now that the baby's father is dead. I had no choice now but breastfeed the baby while giving him other food because I could not afford to take him totally off breast milk'.

Participant 5. ‘I would like my MIL to always ask me questions and make suggestions about how I should feed the baby, this will show that she is concerned about the baby even if I would not take her suggestion’. “She is older and has more experience in these things than me, I can make use of that experience”

Participant 6. ‘That witch (MIL) should just mind her business. Did her own MIL come to check on her every day? If my child test HIV positive in future it is because of her and I will never forgive her”

Participant 7. ‘She never really supports me but I wish she could assist me with money to buy food so I can eat and feed better or with food stuff when she has’.

Participant 8. ‘MIL should stay away from the homes of children and let them take important decisions like feeding of the children themselves. MIL are old and are not aware of information of how we should feed children. They should not interfere.”

Participant 9. **“**She should rather be the one to listen to me and not vice versa. This is my child not hers. I live, see this child every day, I know the child better than anyone else, why should someone come and tell me what I should or should not do with my child, she is crazy’.

Determination of Major Themes

In order to determine the essential themes, I went back and reread the transcripts and listened to all the audio tapes. I reread the details on the above categories and subunits. Guided by the TPB, I then collapsed and realigned the categories in order to come up with

major themes. After reflection, the following major themes evolved a) MLHIV perception of risk b) MLHIV perception of priorities e.g. ensuring a successful marriage through a good relationship with her husband, health of her baby, concern for what people will say c) level of empowerment and d) awareness of MLHIV and MIL. The major themes are detailed below in able 3:

Table 3

Categories and Major Themes

Category	Theme
Concern for infant's welfare	MLHIV perception of risk
Pressure to conform	
Emotions and feelings of loss	
Experiencing stigma and discrimination	MLHIV priorities include ensuring a successful marriage through a good relationship with her husband, health of her baby, concern for what people will be say
Coping mechanisms	
MLHIV expectations from MIL	Level of empowerment
MIL concern for infant's welfare	
Mother's determination to adhere to what they feel is best	Awareness of mothers and MIL
Cross-generational conflict	

Theme 1: MLHIV Perception of Risk

MLHIV perception regarding the risk posed by a particular feeding practices on the health of the baby was a recurring theme during the interviews. MLHIV ability to assess risks and make decisions was reportedly guided by information and advice from health care workers and past experiences. They reportedly stood their ground when they perceived that the advice and directives from their MIL regarding a particular choice of feed or feeding pattern was a risk to the health of their babies.

Theme 2: Priorities of MLHIV

MLHIV expressed conflicting priorities when it comes to deciding and choosing a specific feeding method for their babies. Most prominent ones included a) ensuring a successful marriage through maintaining a good relationship with her MIL, b) health of her baby c) concern for what people including their MIL will be say d) convenience with work schedule. MLHIV choice of feeding and feeding pattern was influenced by at least one or a combination of the above priorities. Depending on what MLHIV prioritized, the result was that they (mothers) ended up experiencing stigma and discrimination, being pressurized to make a different choice or feeding pattern. MLHIV ended up experiencing diverse and unpleasant emotional situations and also developed different coping mechanisms to help live with their choices.

Theme 3: Level of Empowerment

MLHIV expression of the need for material and financial support from their MIL was a direct result of their not being able to afford what will be needed in order to support

a specific feeding pattern i.e. artificial food for the baby or nutritive food that will enable the MLHIV to be able to produce enough breast milk. As a result, MLHIV ended up having expectations form their MIL, which in some cases were fulfilled. These expectations were primarily driven by MLHIV concern for the welfare of their babies.

Theme 4: Awareness of MLHIV and MIL

MLHIV HIV related knowledge and skills especially on infant feeding was a recurring theme across the participants. Information mainly from healthcare providers helped to shape MLHIV priorities and also defined their perception of risk. MLHIV were able to make use of the information acquired to negotiate and convince their MIL. MIL were reported to have limited information on current infant feeding practices. As a result, in some cases, MIL reportedly respected the decisions of MLHIV regarding the feeding of the babies when HCPs were brought in to confirm the rationale for mothers' choice of feed.

Summary

Based on the results and the themes that emerged from the interview analysis, MIL carry much influence over the MLHIV infant feeding behavior. This often occurs to the dismay of the MLHIV and a sense that her status cost her child. MIL often over-rule the medical advice provided to MLHIV when she visits the ANC, consequently it is a challenge to exclusively breastfeed for six months when the MIL can persistently interfere and even feed the child solid foods even against the wishes of the MLHIV. With engagement that is more widespread and sensitization of MIL infant feeding practices and the important role of the biological mother, MLHIV in feeding the infant, MIL might be open to become

supportive of their daughter-in-law infant feeding behaviors. Such efforts will need to take into account the power of deep-rooted traditions, stigma, and discrimination.

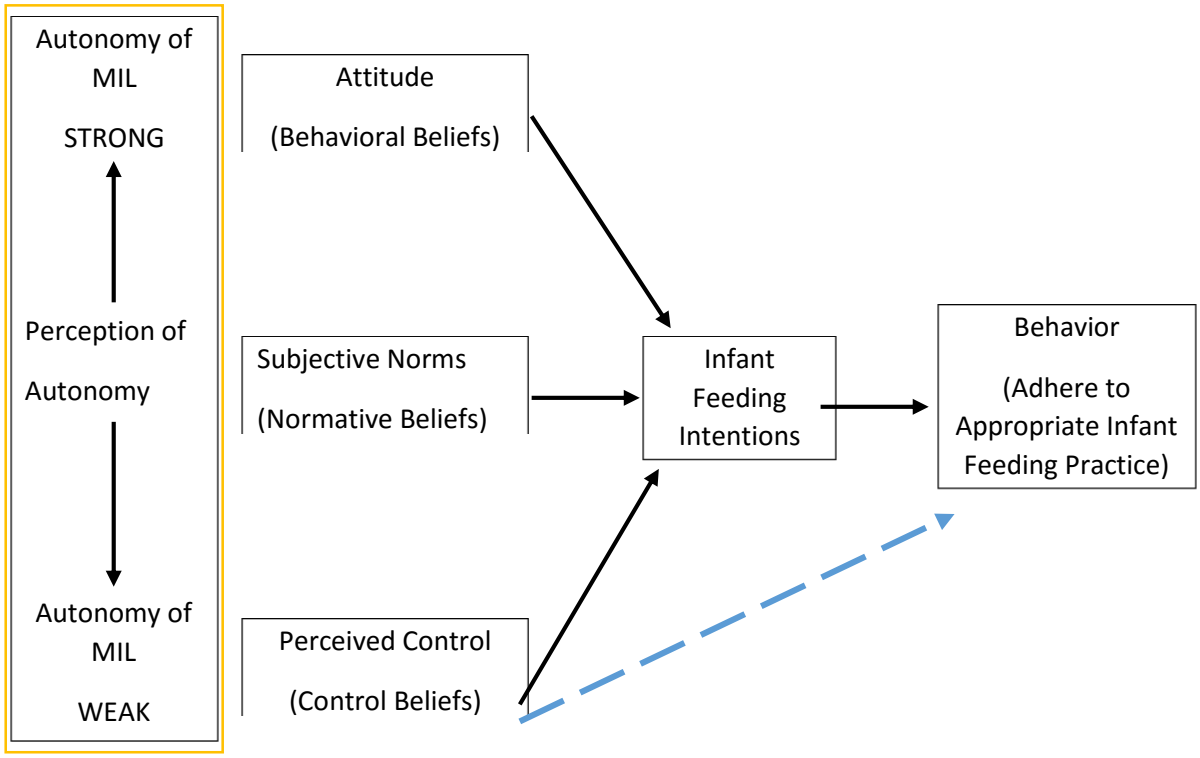

Figure 1. Theory of planned behavior (I Ajzen, 2010; Falnes et al., 2011).

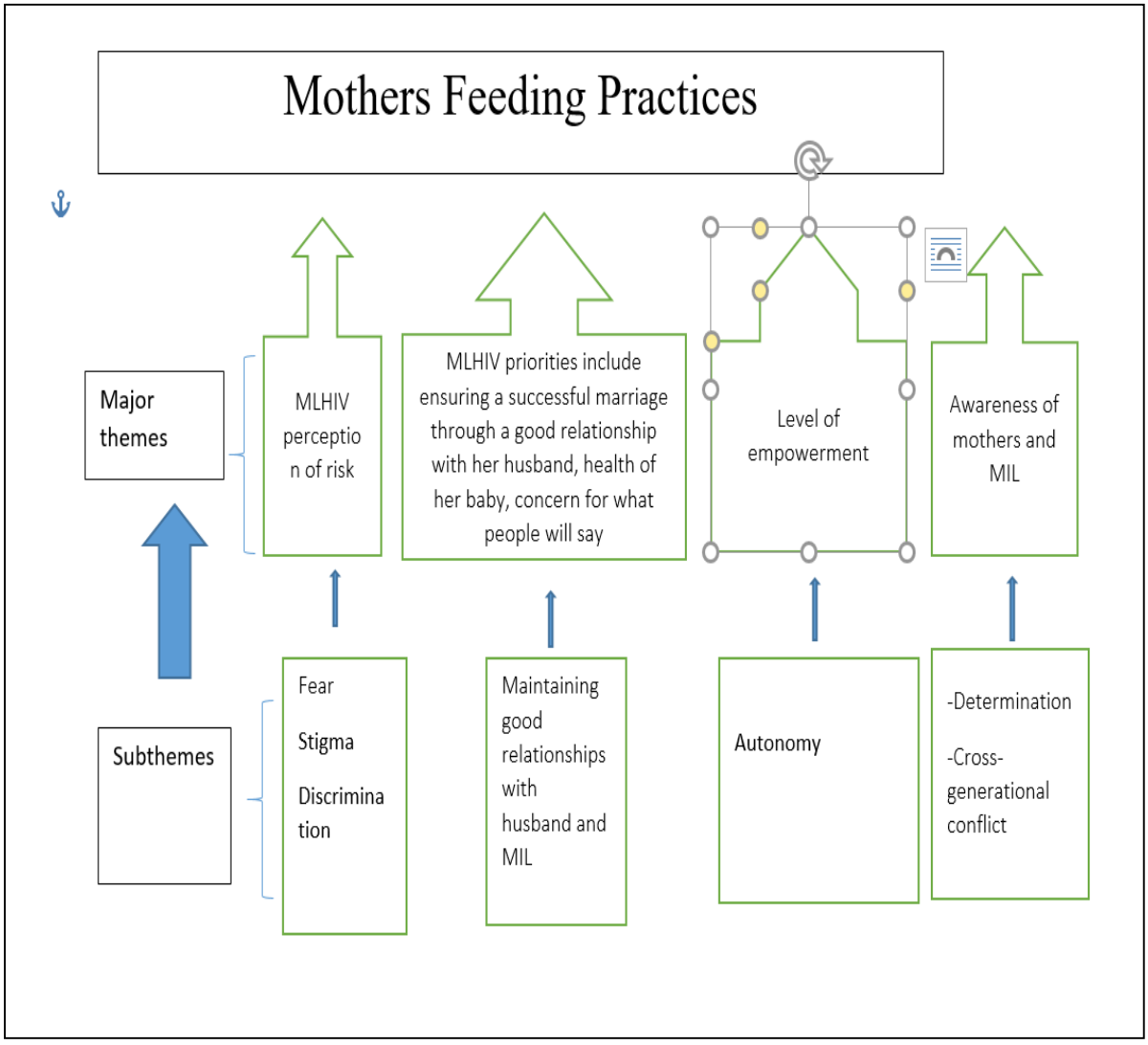

Figure 2. Major themes and subthemes

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this study was to explore and describe the relationships between MLHIV and their MIL and how these relationships affect the infant feeding practices of MLHIV in rural communities in the North West Region of Cameroon. Qualitative methods were used to assess MIL perceptions, perspectives, and experiences on infant feeding and how they affect the infant feeding practices of MLHIV.

The study results showed that in rural communities in the North West Region of Cameroon, MIL who are in close contact with MLHIV have a strong influence over the feeding practices of MLHIV. This is primarily because MLHIV are expected to maintain a good relationship with their MIL to have a successful marriage. MIL are often not aware of the status of their MLHIV. As a result, the influence MIL have on MLHIV could negatively affect the health outcomes of the children of MLHIV because the advice given by MIL regarding infant feeding is not in line with current recommendations. Decisions of MLHIV are primarily determined by the following factors: (a) MLHIV's perception of priorities, including ensuring a successful marriage through a good relationship with her husband, concern for the health of her baby, and concern for what people will say; (b) MLHIV's level of empowerment; and (c) MLHIV's and MIL's awareness of infant feeding practices for HIV positive mothers.

Interpretation of the Findings

Relationships Between MLHIV and Their MIL

The results of the study showed that the relationships between MLHIV and their MIL varied from case to case. Most MLHIV indicated that they had a good relationship with their MIL. For others, the relationship was barely okay, and for some it was tenuous. The study participants (MLHIV), like mothers in the general population, are expected to have a good relationship with their MIL. This is because in the area where the study was carried out, it is the norm for wives and mothers to maintain good relationships with their MIL. As participant 4 stated, "I have to make sure I have a good relationship with her at all cost especially given my health situation (HIV status). If she says bad things about me and my husband sends me away where will I go to?" Another MLHIV (participant 2) stated, "I will never speak rudely to my MIL no matter how much she insists about something concerning the baby. I respect her a lot because one has to respect her MIL otherwise there will be fire at home."

Influence of MIL. To maintain a good relationship with their MIL, MLHIV in some cases made infant feeding choices that were contrary to what they would have otherwise desired. As participant 6 stated:

> Right now she (MIL) thinks I am a bad woman pretending that my milk is not coming out. I have to respect her otherwise my marriage will not be in harmony, she is my MIL I have taken several herbs in order to increase the flow of my milk in order to satisfy her to no avail. When she is around I try to make sure that she sees me breastfeeding.

Although following societal norms, which include respect for MIL, is usually practiced by MLHIV, they are often pressured to make infant feeding decisions that place their infants at risk of contracting the virus.

> If not of that woman (MIL) I would not have combined breast milk and canned milk for my child. She was all over the place telling people that I am not a good wife because I said I wanted to give my baby only canned milk. The worst part is that my husband believed in her so I had to do it (give my child breast milk) in order to keep my marriage intact.

For some MLHIV, their spouses were able to protect them from the influence of their MIL. Participant 6 stated,

> My MIL thinks and says that I am a bad mother because I am only giving my baby artificial milk. I cannot tell her the details because I know what the outcome will be. She has complained to everyone in the family. Thank God that my husband is on my side, otherwise I do not know where I would have been today.

MLHIV expectations from MIL. Some MLHIV indicated that they expected and received support and encouragement from their MIL. The support provided ranged from constant checking by MIL to find out how their grandchildren were doing, advice on child welfare in general and infant feeding in particular, food for the children, and money. Mothers expressed the need for this kind of support and encouragement. For MLHIV experiencing a sense of loss, shame, and rejection, the provision of support from close relatives was considered very helpful.

Seeking help and support from MIL was not a shared behavior among all of the participants. This was especially true in those who were giving artificial feed to their children. This was probably because of the tenuous relationships they had with their MIL as a result of differences on how the child should be fed. MLHIV may have been more likely to receive the desired support from their MIL if a cordial relationship existed with her MIL.

The need for MIL to be aware of recent information on infant feeding within the context of HIV/AIDS was expressed by some MLHIV. Although this information might have helped increase awareness of MIL, it is not certain that an increase in HIV-related knowledge would have helped improve the role MIL played in the infant feeding practices of MLHIV if the MIL did not know the HIV status of the MLHIV.

Theoretical Framework and Results of the Study

The theory of planned behavior was the lens used to interpret the results, generate themes, and interpret them. The major themes reflected MLHIV's intentions, perceptions, and behaviors. According to Ajzen (2005), a person's perception of whether people who are important in his or her life would approve or disapprove of a behavior (normative belief) affects his or her subjective norms for that particular behavior. The major themes that guided MLHIV feeding practice were the following: (a) MLHIV's perception of priorities, including ensuring a successful marriage through a good relationship with her husband, concern for the health of her baby, and concern for what people will say; (b) MLHIV's level of empowerment; and (c) MLHIV's and MIL's awareness of infant feeding practices for HIV positive mothers.

Data samples indicating MLHIV's behavioral, control, and normative beliefs are described below.

Behavioral beliefs. Several participants expressed how their behavioral beliefs affected the feeding patterns of their children. Because the MLHIV believed that some feeding patterns may be harmful to their babies, the MLHIV took steps to avoid exposing their babies to situations where their babies will be given food they the mothers considered harmful. For example, participant 4 explained, "It is convenient for me to express breast milk and keep for the baby sitter to give the baby when I work." In another example participant 2 stated, "I could not leave baby at home because I am afraid my MIL will feed the baby with something else." Yet another mother participant 5 said "My baby is always with me. I cannot leave my baby at home even when my husband is at home."

Control beliefs. Mother's ability to be in control of the situation to some extend strengthen their conviction on the feeding pattern they had chosen. Participant 9 stated "I am able to buy my milk and take care of my baby, I do not need her (MIL) for anything." Another MLHIV (Participant 1) stated "My milk is flowing well and I am able to breastfeed my baby as it is easier that way." Another example, participant 2 explained, "My milk is flowing well and it is easy for me to give it to my baby so why should I change?"

Normative beliefs. For some mothers, their normative beliefs affected the way they reacted towards their MIL. For example participant 9 "I do not care what my MIL thinks or wants, I can afford to take care of my baby." Participant 5 "If I do not listen to my MIL there will be fire at home."

Limitations of the Study

The primary limitation of the study was that it focused only on the lived experiences of the MLHIV. To capture a holistic picture of the dynamics of the relationship between the MLHIV and the MIL and gain a better understanding of the rationale behind MIL actions and advice, data on the lived experiences of MIL are also needed. This, however, does not affect the validity of the study, as the aim was to document the lived experiences of MLHIV.

A second limitation was the study included only one method of data collection: interviews. The use of another method such as focus group discussions(FGD) would have enabled triangulation and would have increased the validity of the results. Including FGD in the methodology would have resulted in a huge quantity of data that would have been difficult to manage. The inability to triangulate the results does not undermine the validity of the results because standard research procedures guided the entire process of the research. A similar study on HIV infant feeding carried out in the same area did not show differences between the data collected from interviews and those collected from focus groups (Muko, Ngwa, Koubitim, &Laah, 2004).

A third limitation was slight differences exist in culture and norms of the various ethnic communities in the North West Region of Cameroon. Cultural norms and practices might have influenced the relationships between MIL and MLHIV as described in this study. For example, in some communities newlyweds are expected to live with their MIL for a few years after marriage. To obtain an exact picture of the influence of MIL on MLHIV, an ideal approach would be to speak with MLHIV from all 38 communities.

However, this would be logistically challenging. A final limitation was that the study focused on MLHIV who were in close contact with their MIL. The assumption was that MLHIV who were not in touch with their MIL might not have experienced any form of influence.

Recommendations for Further Research

The study results indicated that MIL in rural parts of Cameroon influence the infant feeding practices of MLHIV. This influence could be detrimental to the health outcomes of the babies of MLHIV because the desired infant feeding practices of MIL do not take into account the fact that the infant is exposed to HIV. Only two MLHIV had disclosed their HIV status to their MIL. It is likely that MIL did not consider the possibility that the MLHIV were HIV positive, and any advice MIL provided was based on the assumption that MLHIV were HIV negative. A follow-up study on how disclosure of HIV status affects the influence of MIL on infant feeding practices of MLHIV is needed.

The study results were based on MLHIV's lived experiences. To fully understand the role of MIL and the rationale behind specific advice given or decisions and actions taken regarding the feeding of their grandchildren, it would be helpful to collect data on their lived experiences. This is particularly important because the relationship dynamics between members of external families in rural communities in Africa, such as the one in this study, can be very complex.

Although the study's methodology was qualitative, mothers practicing exclusive breastfeeding reportedly received the desired support from their MIL. MIL seemed to favor

breastfeeding more than other methods. It would be interesting for researchers to use both quantitative and qualitative methods to look at preferences of MIL and examine how their influence affects MLHIV's infant feeding methods.

Implications

The first implication is the need for community-wide education on HIV/AIDS. MIL in general and those of HIV positive mothers in particular can only give what they have. The stigma and discrimination experienced by MLHIV primarily result from limited education of MIL and the community in general. Increased HIV/AIDS awareness has been shown to lead to an increase in the uptake of antiretroviral drugs and a reduction in stigma and discrimination (Marseille, Hofmann, & Kahn, (2002). Furthermore, MIL reportedly have had limited education on infant feeding within the context of HIV/AIDS**.** (Peltzer, Mosala, Shisana, Nqueko, & Mngqundaniso, 2007). HIV/AIDS program managers in the area of study should focus on increasing education of community members with regard to infant feeding practices.

Increased disclosure of HIV status should also be encouraged. Context-specific advice and support expected from MIL by their DIL can only be provided if the MIL are aware of the HIV status of their DIL. This is especially important for DIL who live with their MIL or are dependent on them for the feeding of their children. HCP should speak with HIV positive mothers, address their living situations, and encourage them to disclose their status as needed.

Targeted education on infant feeding practices for spouses of mothers should also be conducted. The study results indicated that mothers often relied on their spouses to explain why they had chosen a specific infant feeding pattern when speaking to MIL. Male spouses need to be informed of various infant feeding options, including the advantages and disadvantages of each, to be on the same page with their spouses and to be supportive of their decisions. It is therefore important for HCPs to encourage couple's counseling and focus on infant feeding practices during the sessions.

Frequent testing for HIV among infants is also necessary. HIV positive mothers have been shown to be motivated to adhere to appropriate infant feeding guidelines when their babies test negative for HIV (Omari, Luo, Kankasa, Bhat, & Bunn,2003). Current guidelines for Cameroon require that children be tested at 6 weeks and again at 18 months of age. This gap is too long given the pressure some mothers experience to practice inappropriate feeding methods. More frequent testing will further motivate the mothers to ensure that their babies stay negative.

Conclusion

One notable finding of the study was differences between MIL who are supportive of the DIL infant feeding behavior and those who are not. Perceptions of motherhood and femininity are deeply rooted in tradition, but change nonetheless. TPB can be used to examine the intention to perform appropriate infant feeding behavior and the power of MLHIV to perform the behavior at their discretion. Furthermore, the behavior, subjective

norms, and perceived behavioral control of infant feeding practices all stem from beliefs about infant feeding practices.

In cases in which MLHIV have been medically advised on the most appropriate infant feeding practices but MIL have contrary beliefs, it is reasonable to assume that there will be unfavorable health outcomes for infants. This is because the healthcare provider is often aware of the HIV status of the MLHIV. The MIL might not have this vital information. MIL's normative beliefs are highly influential, so MLHIV experience pressure for self-preservation and perform potentially detrimental infant feeding behaviors to meet MIL expectations. It is complicated and risky for MLHIV to control or exercise self-efficacy to perform the infant feeding behavior that she knows is in the best health and nutritional interest of her infant.

The use of TPB in analyzing the results of the study shows that without addressing MIL's perceptions, spouses' attitudes, and traditional gender perceptions, interventions designed to improve infant feeding behaviors within the context of endemic HIV will occur incrementally at best.

If MLHIV can gain autonomy over their infant feeding behaviors with professional outreach from health professionals, traditional authorities, and religious authorities, then behavioral, normative, and control beliefs of MLHIV may encourage them to believe they have control over their infant feeding practices.

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Appendix A: Interview Guide

Introductory Protocol

We will like to use a tape recorder to audio tape our conversations today. If this is okay by you please sign the release form. For your information, only researchers on the project will be able to access the tapes. The tapes will be eventually destroyed after they are transcribed. In addition, you must sign a consent form. This document states that: (1) you have voluntarily agreed to participate in the study, (2) any information you provide is confidential and that you may stop at any time if you feel like, and (3) we do not intend to inflict any harm. Thank you for your agreeing to participate in his interview, which will last for one hour.

Introduction.

You have been selected to speak with us today because you have been identified as someone who has a great deal to share about the influence mothers in law have on the infant feeding practices of their HIV positive daughters in law. The study does not aim to evaluate your techniques or experiences.

Interviewee Background

1. How often do you meet your mother in law?
2. How have you been feeding your baby?
3. Have you disclosed your HIV status to your mother in law
4. Briefly describe your relationship with your mother in law as it relates to feeding of your child?

5. How involved is your mother in law regarding decisions on how to feed your baby?
6. Probe: Do you seek advice from her or does she offer advice even when you have not asked for it?
7. Tell me about a time when you had to listen and take advice from your mother in law regarding the feeding of your child that was contrary to your wishes?
8. Probe: What will happen if you do not take to advice from your mother in law?
9. How do you perceive the role your mother in law plays regarding the feeding of your child?
10. Probes: Is it working – why or why not?
11. Do you have any thoughts on how mothers in law can play a positive role in the infant feeding practices of their HIV positive daughters in law?
12. Is there anything else you will like to add?