

ORIGINAL ARTICLE

Mothers' Perception of Infant Feeding Counselling in The Context of Prevention of Mother-to-child Transmission of HIV in Lusaka, Zambia

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ABSTRACT

Background: The aim of infant-feeding counselling is to facilitate informed decision on method of feeding in the context of prevention of mother-to-child transmission of HIV. However, HIV-positive mothers are faced with uncertainty on how best to feed their infants. The question we asked for this research was: how does the information provided in counselling on HIV and infant-feeding assist mothers in making decisions for safer feeding practices for their infants?

Methods: This sub-study was part of the larger study conducted on: HIV and infant feeding; choices and decision outcomes in the context of PMTCT among HIV-positive mothers in Zambia. Data were collected through key-informant interviews with health care workers (HCWs) and individual interviews with 30 HIV-positive mothers. Data were collected from January to September 2014. The interviews were digitally recorded and transcribed verbatim. The QRS NVivo 10 version was used for data coding and analysis.

Results: The role of health care workers in PMTCT was to provide information on infant feeding and facilitate informed decision on feeding HIV-exposed infants. Concerning the decision on infant feeding, mothers

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reported that they chose to practice exclusive breastfeeding because it was an optimal choice for their exposed infants. However, there appeared to be other factors that influenced the decision on how to feed HIV-exposed infants: maternal instinct to protect the baby from getting infected with HIV; the perception that a breastfed baby is healthy; and the cost of formula. Potentially, mothers may have risked to practice mixed feeding due to: late initiation of breastfeeding in respect of cultural norms; the belief that the baby can just stop breastfeeding on its own; and pressure from family and community to practice mixed feeding.

Conclusion: While EBF is now recommended for HIV-exposed infants, challenges remain on how to promote EBF and tailor information on infant feeding counselling and assist mothers make an informed decision in settings where formula feeding would not be recommended. Therefore, quality and objective infant feeding counselling should be practiced by HCWs to enhance safer feeding practices.

INTRODUCTION

The aim of infant-feeding counselling in the context of prevention of mother-to-child transmission (PMTCT) of HIV is to facilitate informed decision on method of infant feeding. Mothers infected with HIV in resource-poor

Keywords: *Exclusive breastfeeding, Formula feeding, Infant feeding counselling, Health promotion, Informed decision, Lusaka, Zambia.*

settings are faced with a myriad of challenges and uncertainties on how best to feed their infants. A package of interventions for PMTCT in maternal, neonatal and child health (MNCH) programmes includes antenatal clinic visits, the opt-out approach for HIV counselling and testing, antiretroviral therapy (ART), health facility-based deliveries, infant ARV prophylaxis and HIV testing, in addition to postnatal care. Infant feeding recommended for HIV-positive mothers in Zambia is exclusive breastfeeding for the first six months and beyond, with lifelong ARVs for the mother; here too, counselling is a prerequisite for safer infant-feeding practices^{1,2}. Given the socioeconomic challenges faced by mothers in low-resource settings, breastfeeding protects infants against diarrhoea through reduced risk of bacteria from contaminated formula, other liquids and complementary foods, and most importantly the transfer of maternal antibodies through breastmilk renders some immunity in early childhood³.

Counselling is a professional relationship that is adopted by a trained counsellor and a client for the purpose of making an informed decision⁴. This is a process intended to allow health care workers to advise HIV-positive mothers on safer infant feeding practices while recognising their limitations. However, research findings regarding infant feeding counselling shows that challenges arise in assisting HIV-positive mothers to choose and practice safer infant feeding. These challenges relate to infrastructure, communication skills among healthcare workers, low staffing levels, slow updates on infant feeding guidelines, and, to a certain extent, poor staff attitudes^{5,9}. For instance, healthcare worker behaviours observed in some settings include their personal beliefs towards infant feeding, conveying contradictory messages on PMTCT, exhibiting directive counselling styles, and lack of practical strategies to offer mothers, often leading to improvised counselling approaches¹⁰. In some settings, healthcare workers have attributed challenges faced in counselling mothers to poor compliance by mothers and passive resistance resulting in stress, depression and burnout¹¹. These

factors have a multiplier effect on HIV-positive mothers, who have been observed to feel obliged to hide their feeding practices^{12, 13}, thereby risking the lives of their HIV-exposed infants.

Variations in counselling practices have also been reported and include prescriptive models where one option is proposed for all women, based on the mother's economic status, whereas mothers are concerned with social issues related to the risk of being stigmatized as a bad mother or as being HIV-positive when making a decision¹⁴. Other researchers have observed that counsellors frequently framed counselling sessions as health education programmes and instruction, where mothers are subjected to 'advising and giving of information' – a style rooted in a didactic and instructive model and consequently unable to create an environment where choice could become an option^{11, 15}. These deficiencies have led to recommendations that counselling messages should critically align infant feeding with local context and making use of counselling cards^{16, 17}. An environment that better enables mothers to follow national guidelines and make informed decisions should thus be available, taking heed of lessons learnt in similar settings¹⁸. Therefore, the question we asked for this study was: how does the information provided in counselling on HIV and infant-feeding assist mothers in making decisions for safer feeding practices for their exposed infants?

MATERIALS AND METHODS

Design and setting

This sub-study was part of the larger study conducted on: HIV and infant feeding; choices and decision outcomes in the context of PMTCT among HIV-positive mothers in Zambia. Data were collected through participant observation and in-depth interviews between January and September 2014. Participants were recruited from two health facilities that are part of national PMTCT and ART programme in Lusaka. Apart from curative services, these health facilities provide MNCH services in the district.

Participant and sampling

30 HIV-positive mothers were recruited in the study. Six health care workers were selected from the PMTCT programme as key informants. All participants were purposively sampled. The HCWs were selected based on their availability in the PMTCT programme at the time of data collection. The selection criteria for mothers were that they needed to have attended group health education apart from testing for HIV, placed on treatment regimen (ARVs) and counselled on infant feeding.

Data collection and techniques

The first author and two research assistants collected all data. A semi-structured guide was used to conduct interviews. The main interview question for health care workers was: how is the information provided on HIV and infant feeding assist mothers in making a decision for safer feeding practices for their exposed infants? The main question for the HIV-positive mothers was: how did the information on infant feeding counselling assist you to make a decision on how to feed your HIV-exposed infant from birth?

Key-informant interviews

Key informant interviews were conducted with two nurses, two nutritionists and two clinical officers. The HCWs' interviews were meant to establish how the health facilities planned and implemented infant feeding counselling for HIV-positive mothers. The nurses were key providers of MNCH services, nutritionists were actively involved in counselling for infant and young child feeding (IYCF) while the clinical officers conducted screening, diagnosis and prescribing treatment and all were trained in PMTCT interventions. There were no pre-determined guides on how observations were assessed because of variations within health facilities across the sites.

Individual interviews

Individual interviews were held with mothers who had attended group health education and infant feeding counselling. This was considered an appropriate tool to

effectively gain understanding of the complex and sensitive emerging issues and to allow mothers to express their opinions in their native language and share their experiences on how they decided to feed their HIV-exposed infants.

Data management and analysis

The tape recorded interviews were transcribed verbatim from a primary language into English by four trained research assistants. The transcripts were checked for accuracy, quality and cleaned for anonymity by the first author. When no discrepancies were identified, the files were imported into QRS NVivo 10 version for coding and analysis by the first author and one research assistant coded the data to allow for comparisons as themes emerged. The method of analysis was interpretive descriptive analysis to gain insight into infant feeding counselling as a phenomena from the participants' perspective¹⁹. At the initial stage the content of the data files were read to identify the nature of the phenomenon or the major thematic areas. The main task was to display data in a way that was conceptual in order to make distinctions that were meaningful and provide content that illuminated the phenomena. There are three key steps involved in interpretive descriptive analysis that were used for this study. Detection involved identifying and assigning the substantive content and dimensions of infant feeding counselling. These dimensions included the three major themes: The information that HCWs presented to HIV-positive mothers during infant feeding counselling; how HIV-positive mothers understood information on infant feeding in the context of PMTCT; how mothers decided to breastfeed; how mothers potentially risked to practice mixed feeding. This process was followed by identifying categories that were refined and were then assigned to classes or groups that hold true the data that described the phenomena to exclusively breastfeed.

RESULTS

Mothers frequently self-reported as married (27) and there were younger mothers (15-24 years) with primary level education (0-7).

Table 1 Demographic characteristics of HIV-positive

Characteristic	Categories	Frequency
Age	15-24	10
	25-34	16
	35>	4
Marital status	Single	2
	Married	27
	Widowed	1
Education (Grades)	0-7	14
	8 & 9	11
	10-12	2
	College education	2
Employment	None	28
	Employed	2
Children	1-3	21
	4-6	9
TOTAL		30

The information that HCWs presented to HIV-positive mothers during infant feeding counselling

Infant feeding counselling in the context of PMTCT of HIV is based on national guidelines and applied at every level of health care delivery. One of the elements of infant feeding counselling is for HCWs to communicate to mothers the competitive advantages of breastfeeding and other available feeding options for HIV-exposed infants. For this research, HCWs described their role in PMTCT as providing information on infant feeding and to facilitate informed decision on feeding HIV-exposed infants. A key informant explained: *“Our role is to educate the mothers, give them information, motivate them and support them especially when they choose an option of infant feeding. For some mothers, as long as we give them information and motivate them, there is going*

to be behaviour change especially in the community”. [nutritionist, 4 years in PMTCT]. In the same perspective, another key informant added: *“We emphasise to them to feed their babies on breastmilk exclusively without any other foods until the baby is six months”*. [midwife, over 10 years in PMTCT]. The same midwife explained: *“As they come we teach them as a group, but even when they come to deliver, we talk more on infant feeding because during group health talks it may be difficult for some women to disclose whatever they may have wanted to share secretly. During one on one before the woman delivers we talk to them again to ensure the baby is put to the breast immediately”*.

Emphasizing exclusive breastfeeding while a mother is on ARVs was further explained in the context of making sure the guidelines were followed: *“Initially what we are trying to counsel mothers is to adhere to treatment including their babies because chances of mother-to-child transmission of HIV is reduced. We emphasise these things during counselling so that the risks are reduced further when the mother starts to breastfeed”*. [nutritionist, 25years, 4 years in PMTCT]

How HIV-positive mothers understood information on infant feeding in relation to PMTCT

In order to make an informed decision, mothers needed to understand the principles that guide infant feeding in the context of exclusive breastfeeding, which in this case was a default choice promoted by HCWs. Overall, mothers explained that they chose to practice exclusive breastfeeding because it was optimal for their HIV-exposed infants and themselves. According to a mother of two children, information from the clinic helped her to make such a decision: *“The information I got from the clinic helped me a lot. So at the moment, I am breastfeeding my baby and he is very healthy. At six months I will start giving him other foods such as porridge and water to drink, then I will wean him off”*. [mother, 32years, 2 children]. Another participant added: *“We get help from the clinic on how to breastfeed our babies. For me I will be doing what I have been told by the nurses. They told me not to give the baby food or water,*

but only breast milk. When the time comes to give the baby other foods then I will do that". [mother, 25years, 1 child]

However, for some participants, group health education and infant feeding counselling were: "just the usual talk that goes on at the clinic. Not necessarily the information that I needed to help me choose the method of infant feeding". [Mother, 26years, 2 children]. This description may have been related to the routine health talks that were conducted in the MNCH units for pregnant mothers attending antenatal clinic and other services. The perspective to lack of information on infant feeding was also expressed by other participants in the following responses:

"Unless I am told by the nurses, the thing is that I do not know much, if I was told to stop breastfeeding him, yes I could do it". [Mother, 26years, 2 children]

"I don't have much information, although we were told that we will be taught how to feed the baby but the teaching was not done in details. I just know that I have to breastfeed the baby as advised... things like that". [Mother, 22years, 1 child]

How mothers decided to breastfeed

Although mothers reported lack of information to enable them choose a method of feeding, choosing to breastfeed was influenced by maternal instinct to protect the baby from HIV infection; the perception that a breastfed baby is healthier; and the cost of formula. This section of the article highlights these factors individually.

To protect the baby from getting infected with HIV

The key informants explained that mothers were told that exclusive breastfeeding while on ARVs reduced the risk of the mother infecting her baby with HIV through breast milk. These messages appeared to be understood by mothers. One participant illustrated how she chose to breastfeed so that she could protect her baby from HIV infection: "I am breastfeeding so that my baby should not get infected with HIV". [Mother, 26years, 2 children]. In the same perspective, another participant added: "I want to protect the baby from HIV because I am on medication

(ARVs) and I can breastfeed. I will not miss the medicines so that the baby is protected and grows healthy". [mother, 25years, 1 child].

The perception that a breastfed baby is healthy

The perception of the healthy baby as a breastfed baby was supported by the understanding that with ARVs the risk of the mother infecting her baby with HIV through breastmilk is reduced: "They said I should exclusively breastfeed and they gave me medicine (ARVs) for protection. I learnt that breastfeeding is healthier for the bay than formula feeding". [mother, 33years, 3 children]. Similarly, another participant added: "I chose to exclusively breast feed because I want to see my daughter grow healthy. I was encouraged that if I breastfeed my baby there will be no problems and that is what I want to see". [mother, 33years, 5 children]. The perception of a healthy baby was supported by a young mother of two children who illustrated further that breastmilk does not compare with any other food for the baby: "There are no other foods that you can give a new-born baby apart from breast milk". [mother, 26years, 2 children]

The cost of formula

While participants decided to breastfeed their HIV-exposed infants, their understanding of the cost of formula was considered a barrier to choose a safer feeding option for their infants. They understood that they would not be able to initiate and sustain formula feeding. Typical responses were:

"Sometimes you know that you do not have money, like for me my husband died and if the money that he left for me finishes I will suffer to buy milk. The money that I was supposed to use to buy milk, I use it to buy food for the rest of the family to eat and the baby eats from the breast". [mother, 34years, 3 children]

"Yes money is hard to find. If I chose formula it was going to be difficult to have enough milk for the baby every day. For example one tin can finish in four days, and then you need some more money, it is difficult you see. So it was better that I chose to breastfeed". [mother, 25years, 1 child]

How mothers potentially risked practicing mixed feeding

Despite the messages on the benefits of breastfeeding and especially exclusive breastfeeding, this section of the article highlights factors that promote mixed feeding among selected populations. They include: late initiation of breastfeeding; pressure from family and community to practice mixed feeding; breast complications; and the perceived breast milk insufficiency.

Late initiation of breastfeeding

The difficulty reported by mothers to achieve early initiation of breastfeeding in the midst of social expectations was based on the understanding of the values attached to cultural practices of breastfeeding. In settings driven by culture, certain customs are performed as a ritual before initiation of breastfeeding. The rituals among others may include: washing the breast before the new-born baby is put to the breast in the event that the mother lost the last baby. The herbal medicine is perceived to ward off the spirits of the dead baby and is practiced before putting the new-born baby to the breast after birth. This practice potentially led to delay to initiate breastfeeding as mothers had to wait for the ritual to be performed. Without undue discomfort to share her experience, a mother who lost her two children before the current baby explained: *"I lost my last two children so I had to use the traditional medicine so that this baby should not be seeing his dead siblings. I used the herbs which the elders brought for me and rubbed on my breasts and I also used it to bath the baby. This was done before I breastfed him. After I rubbed the breasts with herbs that's when I breastfed him"*. [mother, 26years, 1 child]. These practices impacted early initiation of breastfeeding and the well being of new-born babies. Without making direct reference to herself, a 28year old mother of three children described the difficulty experienced when one delivered in a health facility: *"It depends on where you come from and how the people are. After delivery there are situations when the baby would be crying but as a mother you have to wait for the elders*

to prepare the herbs to use before breastfeeding. As a mother you would make the baby suck the finger. When asked by the nurses you just tell them the baby has breastfed". [mother, 28years, 3 children]

The above experiences were also illustrated in the following responses:

"In my culture, the breasts are washed before the baby starts breastfeeding or touches the breast". [mother, 35years, 4 children]

"If I had a baby that passed on, I need to take some herbs so that the new baby will not have the spirit of the dead sibling". [mother, 24years, 1 child]

The belief that the baby can just stop breast feeding on its own

The belief that sometimes the baby can wean off from the breast abruptly because the breastmilk is not enough was illustrated by a 22 year old mother of two children. She explained: *"I breastfed my baby for five months but the baby just stopped breastfeeding because my breasts don't produce a lot of milk. So that is how the baby stopped breastfeeding and I started giving him formula and Super shake (Cow's milk)"*. In situations where the mothers informed the nurses about their perceived milk insufficiency, a mother described how she was encouraged to continue to put the baby to the breast in order to have sufficient flow of breastmilk. She explained: *"When at the clinic and the baby cries the nurses tell us to continue breastfeeding saying that is when the milk will be coming out more. Even when you say the milk is not coming out the nurses insist that the baby will pull until the milk comes out"*. [mother, 25years, 1 child]

Pressure from the family and community to practice mixed feeding

Although the health-promotion messages on exclusive breastfeeding appeared to be understood as only feeding the baby with breast milk, mothers were anxious about pressure from the family and community to practice

mixed feeding. This anticipated challenge influenced their capacity to resist mixed feeding. A young first-time mother explained: *“When the baby is born you are advised to only breastfeed by the nurses, but people say that for the baby's stomach to relax you need to give orange juice”*. [mother, 24years, 1 child]. In the same perspective, a mother of five children added: *“Sometimes, you can make a mistake and give the baby water and then you breastfeed him”*. [mother, 31years, 5 children]. Therefore, mothers had to deal with pressure to mix the feed with other fluids and porridge: *“I just used to listen when people are talking in the community. Yes, others were saying that the baby should be given milk (formula), others were saying Super shake (cow milk based product), others Delite and Cerelac porridge”*. [mother, 18years, 1 child].

DISCUSSION

Our findings indicate that regardless of the method of feeding proposed for HIV-exposed infants in resource-poor settings, mothers are capable of understanding the risks and optimal benefits to their infants and themselves if appropriately counselled. The mothers' perception of messages on infant feeding were understood in the context of how they were presented by HCWs. However, we also found evidence of factors that either promote exclusive breastfeeding or mixed feeding that HIV-positive mothers had to consider when choosing how to feed their exposed infants.

In this study, we found evidence that all mothers were encouraged to exclusively breastfeed. According to the HIV consolidated guidelines for treatment and prevention, Zambia adopted option B⁺ where HIV-positive mothers are initiated on combination antiretroviral therapy [cART] during pregnancy and breastfeeding regardless of CD4 count. The strategy is aimed at reducing the rate of mother-to-child transmission of HIV among the exposed infants. Replacement feeding especially with formula would only be considered if acceptable, feasible, affordable, sustainable and safe (AFASS) (MoH, 2014a). However,

in order to achieve exclusive breastfeeding, client and healthcare worker decision-making interactions on infant feeding should be encouraged and supported to increase uptake of messages on the method of feeding^{5,9}.

Awareness of messages to exclusively breastfeed in the context of PMTCT was nearly universal among the mothers studied. Therefore, when appropriately addressed, infant feeding counselling would provide an opportunity for mothers to clarify issues relating to the method of feeding and avoid pitfalls in behavioural change that is required for optimal uptake of EBF. As reported in a similar study, HCWs especially nurses and midwives are the common source of information on breastfeeding and HIV and are required to be more knowledgeable and have the skills to communicate to mothers in an effective way¹⁶. This includes identifying factors that would promote exclusive breastfeeding based on individual circumstances because mothers generally perceive instructions from HCWs as binding – a belief also shared by mothers in similar settings⁵. This is therefore, an added advantage to the process of ensuring that HCWs identify individual factors that may present barriers to EBF during infant feeding counselling. We provide evidence that factors such as the desire to protect the baby from HIV infection, the perception that a breastfed baby is healthier and the cost of formula impacted on how mothers chose to feed their infants in the context of PMTCT.

Mothers' understanding that exclusive breastfeeding and ARVs would protect the baby from getting infected with HIV should be used to strengthen the promotion of EBF in selected populations. Although this study included more women with primary level of education, they showed potential to understand EBF as a PMTCT strategy. Studies in similar settings have however, reported that educated mothers were more likely to heed health education messages and comply with advice than non-educated women²⁰. This study has shown that added efforts by HCWs in promoting EBF would lead to mothers retaining messages that they understand to be important to the survival of their HIV-exposed infants.

This is more so because they perceived that a breastfed baby is healthier than a formula fed baby. In this context researchers have reported the associated benefits of breastfeeding and especially exclusive breastfeeding among the HIV-exposed infants (Coovadia et al., 2007; Iliffa et al., 2005). The associated benefits and the perception that a breastfed baby is healthy is also a practice that is rooted in the way of feeding new-born babies in settings rooted in their culture. However, in these settings, mixed feeding is a norm²¹ and therefore, there is need for intensive health-promotion messages in order to empower mothers to protect EBF to the benefit of their exposed infants. Hence HCWs need to spend more time to explain to mothers the fundamental elements that guide exclusive breastfeeding because this cannot be achieved through a once-off infant feeding counselling encounter that is common in the settings where mothers were recruited from. This is so especially given low literacy levels and socioeconomic status that is common among some selected populations of Lusaka. This aspect should be considered seriously in PMTCT programme because the cost of other alternative feeding options such as formula is considered a barrier to choice of feeding. Participants in this study echoed that if they had the financial means they would have opted to formula feed in order to protect their infants from HIV infection through breastmilk. The WHO infant feeding guidelines recommend the promotion of EBF combined with ARVs for HIV-positive mothers in settings where formula feeding is not acceptable, feasible, affordable, sustainable and safe [AFASS]³. There are also a lot of factors that need to be considered before choosing to formula feeding such as water supply, sanitation and consistent supply of formula among others. Even in settings where free formula has been implemented, challenges abound with serious consequences to underfeeding²². When poorly implemented, such strategies pose serious infant and child health outcomes. Therefore, clear health-promotion messages on EBF are critical so that HIV-positive mothers may be aware and avoid factors that potentially lead to mixed feeding such as late initiation of

breastfeeding perceived milk insufficiency and pressure to practice mixed feeding from family and friends.

Our finding about the difficulty reported by mothers to achieve early initiation of breastfeeding in the midst of social expectations was based on the understanding of the values attached to cultural practices of breastfeeding. Washing of the breast after giving birth and before the new-born baby is put to the breast was reportedly practiced in the event that the mother lost the last baby to ward off the spirits of the dead baby. This practice potentially led to delay to initiate breastfeeding as mothers had to wait for the ritual to be performed by an elderly member of the family or in the community. We did not find research that has reported this practice in similar settings. However, late initiation of breastfeeding has been associated with poor milk flow and poor feeding of the new-born babies. This practice may have influenced the perception of breastmilk insufficiency when mothers believed that babies can just stop breastfeeding on their own when the mother's breasts did not produce enough breastmilk. This may have been compounded with anxiety to deal with pressure to mix the feed from family and the community. This perception could have been due to poor understanding or even lack of skills on how to achieve breastfeeding by use of techniques that have been proven to work²³.

We conclude that the aim of infant feeding counselling is to facilitate informed decision on method of feeding for HIV-exposed infants. While exclusive breastfeeding is now recommended, challenges remain on how to assist mothers make an informed decision to choose and practice safer infant feeding in settings where formula feeding would not be recommended.

Ethical approval

The study was approved by the Humanities and Social Sciences Research Ethics Committee of the University of KwaZulu-Natal (HSS/0104/013D) and the Biomedical Research Ethics Committee of the University of Zambia (No. 016-11-13). Voluntary participation was accorded with written and signed consent.

Limitations of the study

Purposive sampling procedures were followed, however, adjustments were made when attendance was low. We also recognised researcher impact on the study participants and a lack of generalization of the findings beyond the group studied.

Competing interests

The authors declare that they have no competing interests

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REFERENCES

1. Ministry of Health. National Protocol Guidelines for Infant feeding; Integrated Prevention of Mother-to-Child Transmission of HIV/AIDS. Lusaka: Ministry of Health; 2010. p. 1-60.
2. Ministry of Health. Zambia Consolidated Guidelines for Treatment and Prevention of HIV infection. Lusaka: Ministry of Health; 2014. p. 72.
3. WHO, UNICEF, UNAIDS, UNFPA. 2010 WHO Guidelines on HIV and Infant Feeding. An updated framework for priority action. Geneva: World Health Organization 2012.
4. McLeod J. An Introduction To Counselling, 5E: McGraw-Hill International; 2013.
5. Leshabari S, Blystad A, de Paoli M, Moland K. HIV and infant feeding counselling: challenges faced by nurse-counsellors in northern Tanzania. *Human resources for health*. 2007; 5:1-11.
6. Fadnes L, Engebretsen I, Moland K, Nankunda J, Tumwine J, Tylleskar T. Infant feeding counselling in Uganda in a changing environment with focus on the general population and HIV-positive mothers - a mixed method approach. *BMC Health Services Research*. 2010; 10:260.
7. Israel-Ballard K, Waithaka M, Greiner T. Infant feeding counselling of HIV-infected women in two areas in Kenya in 2008. *International journal of STD & AIDS*. 2014; 25:921-8.
8. Sagoe-Moses C, Mwinga K, Habimana P, Toure I, Ketsela T. Implementation of the new who recommendations on HIV and infant feeding: challenges and the way forward *African Journal of Food, Agriculture, Nutrition and Development*. 2012; 12.
9. Gourlay A, Wringe A, Birdthistle S, Mshana G, Michael D, Urassa M. "It Is Like That, We Didn't Understand Each Other": Exploring the Influence of Patient-Provider Interactions on Prevention of Mother-To-Child Transmission of HIV Service Use in Rural Tanzania. *PLoS ONE*. 2014; 9.
10. Tuthill EL, Chan J, Butler LM. Challenges faced by health-care providers offering infant-feeding counseling to HIV-positive women in sub-Saharan Africa: a review of current research. *AIDS care*. 2015; 27:17-24.
11. Buskens I, Jaffe A. Demotivating infant feeding counselling encounters in southern Africa: do counsellors need more or different training? *AIDS care*. 2008; 20:337-45.
12. Kalu S, Reynolds F, Petra G, Ikechebelu J, Dada M, Oluboyo B, et al. Infant Feeding Choices Practiced among HIV Positive Mothers Attending a Prevention of Mother to Child Transmission (PMTCT) of HIV Program in Nnewi, Nigeria. *Journal of AIDS & Clinical Research*. 2014; 05:6.
13. Lazarus R, Struthers H, Violari A. Promoting safe infant feeding practices - the importance of structural, social and contextual factors in Southern Africa. *Journal of the International AIDS Society*. 2013; 16:18037.
14. Desclaux A, Alfieri C. Counseling and choosing between infant-feeding options: overall limits and local interpretations by health care providers and women living with HIV in resource-poor countries (Burkina Faso, Cambodia, Cameroon). *Social Science and Medicine*. 2009; 69:821-9.

15. Oladokun RE, Brown BJ, Osinusi K. Infant-feeding pattern of HIV-positive women in a prevention of mother-to-child transmission (PMTCT) programme. *AIDS care*. 2010;22:1108-14.
16. Katepa-Bwalya M, Kankasa C, Babaniyi O, Siziya S. Effect of using HIV and infant feeding counselling cards on the quality of counselling provided to HIV positive mothers: a cluster randomized controlled trial. *International Breastfeeding Journal*. 2011;6:13.
17. Leshabari S, Koniz-Booher P, Burkhalter B, Hoffman M, Jennings L. Testing a PMTCT Infant-feeding Counseling Program in Tanzania. *Operations Research Results*. 2007.
18. Odongkaraa B, Kigulib S, Edison M. Factors influencing replacement feeding practices among HIV -positive mothers attending the PMTCT program at Uganda. *Journal of Pediatric Infectious Diseases*. 2013; 8.
19. Ritchie J, Lewis J, editors. *Qualitative research practice* London, Thousand Oaks, New Delhi: Sage Publications; 2003.
20. Matovu A, Kirunda B, Rugamba-Kabagambe G, Tumwesigye N, Nuwaha F. Factors influencing adherence to exclusive breastfeeding among HIV positive mothers in Kabarole District, Uganda. *East African Medical Journal*. 2008; 85:162-17-.
21. Hazemba A, Ncama B, Yusuf A. Socio-cultural determinants of exclusive breastfeeding: Lessons learnt from experiences of HIV-positive mothers in Lusaka, Zambia. *Africa Journal of Nursing and Midwifery*. 2015; 17:104-17.
22. Doherty T, Sanders D, Goga A, Jackson D. Implications of the new WHO guidelines on HIV and infant feeding for child survival in South Africa. *Bulletin of the World Health Organization*. 2011; 89:62-7.
23. Dykes F. Twenty-five years of breast-feeding research in Midwifery. *Midwifery*. 2011; 27:8-14.