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Commonalities and differences in Infant Feeding attitudes and practices in the context of HIV in Sub-Saharan Africa: a Metasynthesis

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Abstract

Exclusive breastfeeding (EBF) has been identified as a key intervention to promote infant health and to reduce the vertical transmission of HIV. Despite this knowledge and increased resources to promote EBF, the practice in sub-Saharan Africa (SSA) remains low among HIV+ women. Although a number of qualitative studies have been conducted throughout SSA, the influences on and consequences of infant feeding choices of HIV+ mothers findings have not been regarded systematically. Therefore, our objective was to identify overarching themes, commonalities, and differences in infant feeding choices among qualitative studies with HIV+ mothers in SSA. Sixteen qualitative studies of infant feeding practices in the context of HIV were identified. Noblit and Hare's (1988) 7-step metasynthesis methodology was used to analyze the experiences of HIV + women and those who provide infant feeding services/counseling. Data were available from approximately 920 participants (i.e., 750 HIV+ mothers, 109 healthcare providers, and 62 family members) across 13 SSA countries from 2000 to 2011. From these data, five themes emerged within which 3-4 overarching key metaphors were identified. The consistency of key metaphors across a variety of geographic, economic and, cultural settings suggest the importance of approaching infant feeding holistically, within the context of maternal knowledge, health care support, family resources, and cultural expectations. EBF campaigns in SSA are more likely to successfully support optimal health for infants and a safe supportive environment for their mothers when the impact of infant feeding decisions are evaluated across these themes.

Keywords

Breastfeeding; Vertical transmission; Africa; HIV; Mother-to-child transmission; Metasynthesis

Introduction

Globally, 33 million persons are living with human-immunodeficiency virus (HIV), one-third of whom live in sub-Saharan Africa (SSA; UNAIDS, 2010). In 2011, 330,000 children worldwide contracted HIV. Approximately 90% of these infections were a result of vertical

transmission, which can occur intrapartum, in utero or postpartum through breast milk (UNAIDS, 2012). In SSA, HIV disproportionately affects women and infants, who account for more than half of all HIV infections (UNAIDS, 2010).

The World Health Organization (WHO) recommendations for infant feeding of HIV exposed infants have continued to evolve since HIV was first detected in breast milk in 1985 (Thiry et al., 1985; Young et al., 2011). Given the risk of HIV transmission through breast milk the use of formula was trialed and initially recommended by the WHO (WHO, 2003). However, increases in infant mortality from diarrheal disease and respiratory infections resulting from improperly prepared formula and the absence of immune protective components of breast milk, the WHO guidelines were further modified. They encouraged mothers to choose either exclusive breastfeeding (EBF) or exclusive formula feeding (EFF), if the mother's situation was such that formula feeding was acceptable, feasible, affordable, safe and sustainable (AFASS; WHO, 2003; 2007). Assessing if AFASS criteria could be met proved difficult, which meant that many women who did not meet AFASS criteria were encouraged to EFF. The overestimate of women meeting AFASS criteria contributed to mothers mixed-feeding (a combination of breastfeeding with supplemental food; water, porridge or formula before 6 months of age), which is associated with much higher rates of vertical transmission and infant morbidity and mortality (Doherty, 2011; Msellati & Van de Perre, 2008; Thior et al., 2006).

Recommendations evolved further when it was discovered that with antiretroviral medications (ARVs), the risk of vertical transmission decreases from 42% to less than 5% with the practice of EBF and ARVs (WHO, 2010). In 2010, the WHO updated its infant feeding guidelines to recommend EBF for the infant's first 6 months in limited-resource settings (WHO, 2010). Despite additional promotion of EBF (e.g., WHO recommendations specific to limited-resource settings, greater emphasis on healthcare provider infant counseling in antenatal clinics), it remains rare in SSA (Tylleskar et al., 2011; UNICEF, 2006). Thus we know that EBF is vital for the health of HIV exposed infants, and that rates of EBF are low in SSA, but our understanding of why is limited. Therefore, we conducted a metasynthesis to enhance our understanding of the collective experiences of infant feeding with HIV+ mothers in SSA.

Methods

Metasynthesis is an interpretive integration of qualitative findings of data, including phenomenological, ethnographic, grounded theory and other interpretive or descriptive findings (Sandelowski & Barroso, 2007). The aim of a metasynthesis is to conduct a deeper investigation of extant data that results in a new interpretation of the phenomenon (Beck, 2011). The most common metasyntheses approach (Beck, 2011) involves synthesizing qualitative results across studies on a specific phenomenon (e.g., Noblit & Hare, 1988). A metasynthesis differs from a metasummary, which uses a quantitative orientated analysis of qualitative findings to explain the data (Sandelowski and Barroso, 2007). We used Noblit and Hare's (1988) methodology to inductively interpret findings across multiple qualitative studies with the aim of presenting a critical account of infant feeding experiences in the context of HIV, and to provide cross-study conclusions to inform future intervention design.

Sixteen qualitative studies on infant feeding among HIV+ women in SSA were identified through online database searches using CINAHL, Pubmed, PsychInfo, JSTOR, Proquest and Google Scholar. Studies were included if they: 1) were qualitative, 2) included HIV+ mothers experiences infant feeding and, 3) were set in SSA. Exclusion criteria included qualitative studies whose participants' HIV status was unknown or negative and, mixed-method studies, as data saturation was achieved with qualitative studies alone. We limited

our search to SSA due to the inordinate HIV burden there and the difficulties in generalizing findings across multiple continents. In total, 16 articles from 13 SSA countries with approximately 920 participants (i.e., 750 HIV+ mothers, 109 healthcare providers, and 62 family members) were included (Table 1). Articles spanned a range of disciplines, including anthropology, medicine, nursing, psychology and nutrition. Researchers employed various qualitative approaches, mainly, in-depth interviews and focus groups (Table 2).

Noblit & Hare's (1988) seven-step iterative process was used to analyze the data. After choosing the phenomenon, identifying and reading texts, we determined how the studies relate with one another. In this step, *key metaphors* were extracted from each study and juxtaposed to one another. A metaphor can refer to concepts, phrases, words or themes that synthesize the studies. Noblit & Hare (1988) identify three assumptions upon which studies may be related, i.e., reciprocally, through illustration of a line of argument, or refutational/opposition. We use their first assumption, "that the accounts are directly comparable as 'reciprocal' translations". We then translated the key metaphors of each study into more general terms that fit across all studies.

Results

The reciprocal translation of key metaphors resulted in five themes surrounding infant feeding choices and behaviors (Table 3). The themes include, 1) (influence on) EBF, 2) (influence on) EFF, 3) (role of) healthcare providers, 4) (role of the) family and, 5) identity as wife and mother in the context of infant feeding.

Theme 1: Influences on EBF

The impacts from EBF fell into three key metaphors, *fear* of transmission of HIV, *cultural norms*, and *knowledge* about EBF. The primary metaphor expressed was the *fear* mothers had about the potential transmission risk from exposing their infant to HIV. Breast milk was repeatedly described as being "toxic", "bad", or "poisonous" and the fear mothers felt was evident. One mother in Malawi said, "I worry, because I am breastfeeding my baby. And I feel bad that maybe I may infect her with my HIV. And, I feel that I am ruining her future and infringing on my baby's rights" (Levy et al., 2010, p. 5). In another case, an Ethiopian mother expressed this conflict as affecting her physically, "every time the baby was sucking my breasts I felt like throwing up...I thought I was breastfeeding, but I was breast-poisoning" (Koricho et al., 2010, pp. 4-6).

Furthermore, although breastfeeding is the norm in most SSA settings, EBF is rare (Rollins et al., 2007). Thus, the decision to EBF was also a shift in cultural and social norms, which had major implications if family involvement in childcare was high. A mother from Burkina Faso stated, "in the compound, they prepare *dolo* (fermented drink), if I leave here, even a moment, they will give her [infant] a drink" (Cames et al., 2009, p.254).

One of the difficulties of EBF is an incorrect understanding of the definition. Lack of knowledge defining EBF resulted in mothers mix-feeding while believing they were practicing EBF. The most common example seen was through feeding gripe water (a water-based mixture used to treat colic, dehydration, and gastrointestinal distress), as seen through this Malawian mothers words, "I managed to practice exclusive breastfeeding for 6 months and only gave gripe water when my baby was crying a lot due to stomach pain" (Ostergaard & Bula, 2010, p. 217).

Additionally, key metaphors regarding milk insufficiency were present. Mothers who regarded their milk production lacking due to personal hunger, personal emotions, or breast milk being inadequate for optimal nutrition feared their infant was not being adequately fed.

A Swazi mother stated, “she was not getting enough from breastfeeding. There was not enough milk when I was hungry” (Buskens et al., 2007 p. 1104).

Theme 2: Influences on EFF

Unlike in resource- rich settings where water quality, cost, and availability of formula are accessible for most HIV+ mothers, women in resource- limited settings met unforeseen repercussions from formula use. Three key metaphors comprise this theme, *child health*, *stigma* and, *cost*. *Child health* was described well by one nurse from South Africa, “First we were happy with the free formula because we thought our problems with the infected mothers were over....But now we see it...is a lot of trouble for the baby...diarrhea, sickness and not growing well” (Sibeko et al., 2009, p.1987). Many mothers reported increased illness in their infant, as seen through this Malawian mothers quote, “I did not breastfeed my baby, but she had diarrhea for a full three months” (Seidel et al., 2000, p. 28).

Women experienced *stigma* from their communities. Because breastfeeding is the cultural norm, formula feeding can be a sign to a woman’s family or community that she is HIV+. One South African mother said, “...when they see me coming with the tins [formula] they laugh at me, they say I have HIV and I tell the I do not have AIDS... and I hide the tins” (Doherty et al., 2006b, p. 94).

The *cost* and availability of formula also proved to be a barrier for mothers. A South African mother states, “Milk get finished when I don’t have money to buy extra tin for my child and I do feel that it is better to breastfeed” (Ramara et al., 2010, p.11) and, “the nurses at the clinic sometimes tell us they have no milk to give us” (Sibeko et al., 2009, p. 1986).

Theme 3: Role of the Healthcare Provider

The impact healthcare provider messages had on mothers were apparent. The key metaphors within this theme centered on the *influence* healthcare providers have and whether that translated into *gratitude* by mothers or feeling *judged*. Another key metaphor that emerged was the *confusion* healthcare providers expressed in regards to changing WHO recommendations and their concern for losing mothers *trust* because of the changing messages. An Ethiopian healthcare provider’s sentiment towards messaging is reflected well, “I am really hoping that the new recommendation [WHO, 2010] is only for discussion; not for actual practice. How can we tell these mothers? They have been told repeatedly about the risk of HIV transmission through breastfeeding, and now all of a sudden breastfeeding is ‘good’ again. Do you think they are going to trust us anymore?” (Koricho, 2008, p. 63). Changing messages have led to increased confusion and mistrust.

A trusting relationship between healthcare provider and mother is critical to impart lasting change. However, *trust* cannot be assumed, as stated by this Namibian mother, “they talk what they know...we in the community have our ways” (Buskens et al., 2007, p. 1105). The approach of a healthcare provider in counseling makes a substantial difference in the sense of *gratitude* and *trust* mothers have in their provider. A mother from Burkina Faso reflects a sentiment of feeling *judged* or unsupported, “When I said I wanted to breastfeed, they [healthcare provider] said at the hospital: ‘your child’s going to die if you breastfeed. You’ll contaminate him. The risk is too high. You must give formula.’ Did I have a choice? I gave formula” (Desclaux et al., 2009, p. 824). Conversely, supportive counseling can leave mothers with a sense of *gratitude* as expressed by this Ethiopian mother, “When I asked the nurse whether I was the only one breastfeeding or not, she told me that there were many other mothers who were breastfeeding. I don’t feel loneliness” (Koricho, 2008, p. 62).

Theme 4: Role of the Family

Mothers who were able to execute their decisions more successfully often had the support of their husband or family. *Support* was the major metaphor, as seen through this Congolese mothers quote, “It was just me, my husband and my mother who said, as soon as you deliver, you must not give your infant breast milk” (Maman et al., 2011, p. 262).

Other metaphors reflective of the family role were *disclosure* and *truth*. Many mothers hid the truth from family fearing disclosure. In Ethiopia, “I told them [family] I was bottle feeding her because my breasts did not have enough milk. My elder sister...came with warm water, and started massaging my breasts... I had nothing to say, and had to do what she told me to do... I was praying to God so that she [baby] would not be able to suck” (Koricho et al., 2010, p. 5). In South Africa, “my mother asked me why I did not breastfeed. I told her... I have a problem with my breast” (Doherty et al., 2006b).

Positive family *support* provided the safety-net mothers needed to carry out their infant feeding decisions. However, fear of *disclosure* to family is real for some mothers, as seen by the repercussion of this Malawian mother, “I disclosed my status to my husband and since he did not want me to have the test, immediately he started shouting at me as a prostitute who did not respect him...then he left me” (Ostergaard & Bula, 2010, p. 216).

Theme 5: Identity as Wife and Mother in the Context of Infant Feeding

Breastfeeding was perceived to be fundamental to motherhood. A Tanzanian mother said, “A real mother should breastfeed her child” (Leshabari et al., 2007, p. 551), and a mother from Soweto, “when you breastfeed you communicate with the baby. When the baby looks at you, you will normally say I love you even if you don’t say it in words but in your heart” (Buskens et al., 2007, p. 1104).

A lack of self-efficacy was present throughout the studies, as seen in the following quote by a South African mother; “but now I don’t know what to do because I did not want to give this sickness [HIV] to my child, but my mother and the father would ask me why I was not breastfeeding this child” (Sibeko et al., 2009, p. 1986). Perceptions of being a “*bad mother*” for not attending to their child in typical ways was also evident, as reflected by this Malawian mother, “if you go to social gatherings and your baby start crying they start insulting you. ‘Why are you not breastfeeding your child? Is it yours or have you stolen from someone?’ it is very difficult to stop breastfeeding at this age” (Ostergaard & Bula, 2010, p. 218) or reflected by this Ethiopian mother, “To survive and live you lie. What else can you do? You build your fence with piles of lies” (Koricho, 2008, p.52).

Discussion

A collective picture of infant feeding as experienced by HIV+ mothers emerged through analysis of data from 13 SSA countries. More similarities than differences were evident throughout each theme (Table 3). For example, across studies, the influences on EBF centered on HIV+ mothers’ fear of transmitting HIV to her infant. The major barriers to EFF included stigma and disclosure as well as the logistical consideration of cost.

We also found that in most studies, for a woman to be able to successfully EBF and EFF, healthcare providers and family were pivotal. Specifically, the importance of relaying accurate messages to mothers regarding EBF definitions and the risk of transmission for each modality of feeding was influential to optimal infant feeding outcomes. In addition, although it cannot fall on healthcare providers alone to solve the issue of stigma, it is in their capacity to support mothers in formulating strategies that equip her with the skills to confront it. In both cases (i.e., EFF and EBF) healthcare providers are well positioned to

support mothers in enhancing their self-efficacy through improving maternal information regarding HIV and infant feeding, and through building strategies to navigate known barriers (e.g., stigma). Likewise, they are in a position to help facilitate conversations around disclosure in a safe and controlled environment by including family members in care. Finally, a supportive family enables a mother to carry out her infant feeding decision.

The failure of family members or healthcare providers to support HIV+ mothers in executing a decision to EBF or EFF typically resulted in the adoption of mixed-feeding. Conversely, those mothers who were well supported and able to disclose their status to a supportive family unit were more likely to successfully carry out their initial infant feeding decision.

The themes identified also revealed how an HIV+ mother's decision to either EBF or EFF are actually both in conflict with concepts of ideal motherhood. An HIV+ mother who practices EBF fears transmission risk and putting her infant's safety and underfeeding in question, however if EFF, the signature behavior of a mother (i.e., breastfeeding) is eliminated altogether. Acknowledging this dilemma is import to providing HIV+ mothers the skills they need to enhance their self-efficacy and execute optimal infant feeding.

Strikingly, there were not major differences in mothers' experiences of infant feeding across SSA studies. The main difference found among these studies was the greater exposure South African mothers had to EFF as an option. This is likely due to South Africa offering formula free of charge as their National Policy and thus creating an environment where EFF was more likely to be part of an HIV+ mother's experience.

Implications for the Field and Future Research

The many parallel experiences of HIV+ mothers across these 16 qualitative studies in SSA suggest the salience of the 5 themes and their key metaphors to implementation of infant feeding campaigns (Table 3). Efforts to improve self-efficacy through supportive healthcare provider relationships that equip mothers' with the resources to overcome stigma and fear, while simultaneously upholding an authentic tie to concepts of motherhood are important. Given that healthcare providers have been the identified link between global efforts to eliminate vertical transmission and direct care (WHO, 2010), increased support is needed to provide them with the means to effectively support HIV+ mothers. Finally, the inclusion of families and communities in infant feeding interventions seems likely to help mothers to feed their infant in the safest way for their particular circumstances. EBF campaigns in SSA are more likely to successfully support optimal health for infants and a safe supportive environment for their mothers when infant feeding consequences are evaluated holistically within the context of maternal knowledge, health care support, family resources, and cultural expectations.

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Table 1

Demographic Information from Each Individual Study included in Metasynthesis

Author and Year	Country	Sample Size	Age of participants	Participants' pregnancy status at data collection	Dates of Data Collection
Abiona et al., 2006	Nigeria	15 mothers, 17 fathers, 14 grandmothers Total-46	Not Specified	Not Specified	Not Specified
Buskens et al., 2007	Namibia, Swaziland, South Africa	155 mothers, 31 relatives, 92 health workers, 7 traditional healers. Total- 285	Not Specified	Pregnant women and post-partum: <1yr	2003
Cames et al., 2010	Burkina Faso	51 mothers	Not Specified	post-partum: 1-5months	2006
de Paoli et al., 2008	South Africa	16 mothers	20-29	Post-partum: 4-7months	2005
Desclaux & Alfieri, 2009	Burkina Faso Cambodia Cameroon	Burkina Faso- 85, Cambodia-80, Cameroon-65. Total- 230 mothers	Not Specified	Not Specified	Burkina Faso 2002- 2007 Cambodia 2002- 2004 Cameroon 2002- 2007
Doherty et al., 2006a	South Africa	27 mothers	25	Interviewed once prenatally and once post-partum	2004-2005
Doherty et al., 2006b	South Africa	40 mothers	24	Post-partum: mean infant age 8months	2004
Koricho, 2008	Ethiopia	14 mothers breastfeeding, 8 mothers formula feeding, 10 healthcare providers Total- 32	Not Specified	Post-partum: <1yr	2007
Koricho, Moland & Blystad 2010	Ethiopia	22 mothers	Not Specified	Not Specified	2007
Leshabari et al., 2007	Tanzania	22 mothers	Not Specified	Antenatal: 36 wks	2003-2004
Levy, Webb, & Sellen., 2010	Malawi	55 mothers	18-33	Prenatal and post-partum	2004-2005
Ostergaard & Bula 2010	Malawi	21 mothers	18-40	Post-partum, infants 7- 12months	2008-2009
Maman et al., 2011	Democratic Republic of Congo	40 pregnant women and mothers	Not Specified	Prenatal and post-partum	2006
Ramara et al., 2010	South Africa	10 mothers	Not Specified	Post-partum	Not Specified
Seidel et al., 2000	South Africa	2 focus group sessions with mothers	Not Specified	Not Specified	Not Specified
Sibeko, L et al., 2009	South Africa	31 mothers	25	"Mothers of young infants"	2004-2005
Thairu et al., 2005	South Africa	22 mothers	26	Post-partum: <; 6 months	2002

Table 2**Methodological Characteristics of the Qualitative Studies Included in the Metasynthesis**

Author	Primary Discipline of Authors	Qualitative Research Design¹	Data Collection	Data Analysis	PMTCT counseling delivered
Buskens et al.	Anthropology	In-depth Qualitative Research	Interviews	Conceptual framework analysis (Ritchi & Spencer, 1994)	Not Specified
Cames et al.	Not Specified	Qualitative Study	Focus Group Discussions	Interpretive approach into exhaustive categories (Krueger, 1998)	Not Specified
de Paoli et al.	Medicine	Qualitative Study	Semi-Structured In-depth Interviews	Grounded Theory (Strauss & Corbin, 1998)	Some
Descalux et al.	Anthropology	Qualitative study	Interviews; Ethnographic Observations	Comparative analysis of transversal items	Yes
Doherty et al.,(a)	Medicine	Longitudinal Qualitative Interview Study	Open-ended interviews	Thematic content method	Yes
Doherty et al.,(b)	Medicine	Qualitative Interview Study	Interviews; One Focus Group Discussion	Interpretative approach for key categories and recurring themes	Yes
Koricho	International Health	Qualitative Study	Qualitative triangulation using in-depth interviews; Observation	Pope and Mays, 2006	Not Specified
Koricho et al.	Public Health	Qualitative Interpretive Study	Interviews	Qualitative triangulation methods; themes	Not Specified
Leshabari et al.	Nursing	Exploratory Descriptive	Observation; In-depth Interviews	Not Specified	Yes
Levy et al.	Anthropology	Ethnographic	Observation; Semi-structured Interviews; Focus Group Discussions; Key Informant Interviews	Themes	Yes
Ostergaard & Bula	International Health, Immunology and Microbiology	Qualitative study	Observation; In-depth Interviews	Thematic approach	Yes
Maman et al.	Health Behavior	Qualitative study	In-depth Interviews	Themes	Not Specified
Ramara et al.	Nursing	Phenomenological	In-depth Unstructured Interviews	Lived experience repeating themes	Not Specified
Seidel et al.	Social Work	Qualitative Investigation	In-depth Discussions	Ethnographic	Not Specified
Sibeko et al.	Nutrition	Qualitative Study	In-depth Interviews; Observations	Pattons general interview guide (2002)	Not Specified
Thairu et al.	Nutrition	Ethnographic Study	Exploratory Interviewing; Ethnographic Interviews	Conversation Analysis	Not Specified

¹ Study design, data collection techniques and analysis are stated based on the authors' terminology. For example, if the author wrote that they used "In-depth Interviews" it is stated as such. Likewise, if the author stated a specific methodologist for their data analysis, it is listed, otherwise the methods as described by the authors are included. If those details were not provided and simply the outcome was stated that is what is included in the table.

Table 3

Key Metaphors from each Study as Related to the Overarching Themes

	Theme 1: (Influences on) EBF	Theme 2: (Influences on) EFF	Theme 3: (Role of) Healthcare Providers	Theme 4: (Role of) the Family	Theme 5: Identity as Wife and Mother (in the context of infant feeding)
Overarching Metaphors	Fear of transmission Cultural norms Knowledge	Child health Stigma Cost	Influence Confusion Trust Gratitude/judgment	Support Disclosure Truth	BF is hallmark Self-efficacy Disclosure Mistreatment
<u>Study^I</u> Buskens et al.,(2007)	“Suspicion”. “Breast milk alone not enough for infant”. “Infants can’t survive without water”.	“Suspicion”. “Making excuses”. “Means to choose”.	“Throw away baby’s life”. “[Healthcare provider] Not highly regarded”.	Infant raised by family. Not only the mother’s child, but the whole family. “Mother or grandmother first to notice infant problems”.	“Give up motherhood to save infant”. “Alone”. “BF is form of communication with baby”.
Cames et al., (2010)	Worried about transmission. Choose EBF b/c of “Fear”. “Default choice”. “Normative beliefs”.	“Negative reactions”. “Stigma”. “Opposition from family”. “Forced to abandon EFF”. Top priority. Support is Key. “With formula you stay calm”. “Disclosure necessary to success”.	“Gratitude” from mothers. “Dependence on relationship”.	“Family very involved”. Positive support critical.	Social implications from not BF. “Responsible”. “Stigma”. “What’s optimal”?
de Paoli et al.,(2008)	“Guilt at risking transmission”. “Social norms”. “Infant crying”.	“Not giving child love”. “Guilt”. “Stole the breast”. “Avoid infection at all costs”. “Safety for child”.	Limited practical advice. “Cold, rainy or sunny-stop BF [healthcare provider on excuses mothers make]”. “Judgmental”. “Coercive”. “We [healthcare provider] make choice for them”.	“Had to persist against family”.	“Loneliness”. “Despair”.
Descalux et al.,(2009)	“Fear of transmission”. “BF highly valued”. HIV infected milk is “Bad milk”.	“Cost”. “Explain yourself”. Social pressure.	“Counsel until mother accepts our opinion”. “BF is forbidden”.	“Rely on financial support”. Support from husbands varied. Family situation allows mothers to “choose”.	“Alone”. Alliance to husband threatened. “Stigma”.
Doherty et al., (2006a)	“Need Support”. Fear of negative consequences from unintended disclosure. “Forced to choose because of HIV”. “Insufficient milk production”.	Worried about unintended disclosure. “Death from respiratory illness”. “Cost”. “Free formula”.	“Conflicting messages”. Counseling.	“Persistent”.	“Couldn’t do the right thing for baby, scared for self”. “Personal beliefs”. “Critical time in life”.

	Theme 1: (Influences on) EBF	Theme 2: (Influences on) EFF	Theme 3: (Role of) Healthcare Providers	Theme 4: (Role of) the Family	Theme 5: Identity as Wife and Mother (in the context of infant feeding)
Overarching Metaphors	Fear of transmission Cultural norms Knowledge	Child health Stigma Cost	Influence Confusion Trust Gratitude/judgment	Support Disclosure Truth	BF is hallmark Self-efficacy Disclosure Mistreatment
Doherty et al., (2006b)	"Fear of transmission". Self-efficacy threatened. "Bad milk". "Insufficient milk".	"Everyone knows the tin". "Struggle for access". "Excuses". "Stigma with formula". "Ridiculed". "Scorned". "Desire to protect". Free formula.	"Forced". "Overestimated risk of breastfeeding". "Greatest influence". "Power, authority". Power between health worker and client.	"Financial support". "Fear of disclosure". "Hiding the truth".	"Breast milk is best, but must formula feed". "Social isolation". "Despair". "Powerlessness". "Hide away". Disbelief in abilities to care for baby. "Hidden truths".
Koricho (2008)	"Fear of breast milk". "Had to change decision". "Cursing myself". "Sinful".	"No savings to buy tin milk". "Disclosure". "To survive and live, you lie".	"Fear of what to tell mothers". Conflicting messages. "[mothers] Fear of breast milk".		"Can't be a mother". Divorce linked to disclosure. "Bad mother". "Beg on street for money". "I will be punished". "I almost killed". "I poisoned my baby". "No peace". "What can I give"? "Darkest moment of my life". "Will God give a second chance"? "NO choice".
Koricho et al., (2010)	"Fear of breast milk". "Difficult to live with decision". "Felt like throwing up". "Offense against God". "Crime". "Inflicts harm". "Killing an Infant"	"Social pressure". "No excuses".	"Nurse screamed". "Buy cows milk". "Negative attitude towards BF".		"Sinful mother". "Helpless". "BF only natural way to feed". "BF equivalent to knowingly killing your baby".
Leshabari et al., (2007)	"Disclosure". "Stress". "Obsessed with danger of transmitting to infant". "EBF is alien".	"Lying". "Rumored to be having an affair". "Family pressure". "Infant constipation". "Gossiping". "Costly".		"Pressure". "Family support critical". "Won't accept daughter-in-law who doesn't breastfeed".	"Guilt". "A real mother breastfeeds". "Social pressure to BF". "Severe hardship". "Self-determination". Intentions vs Actions. "Stigma". "Perception of having an affair if not breastfeeding". "Baby needs water".
Levy et al., (2010)	"Baby has a right to grow up". "Worry". "Frustration". "Gripe water	"Social pressure". "Cost".	"Just tell mothers what to do, don't give them the information".		"Baby suffers with early weaning". "Feel bad if baby is infected". "Cultural norms".

	Theme 1: (Influences on) EBF	Theme 2: (Influences on) EFF	Theme 3: (Role of) Healthcare Providers	Theme 4: (Role of) the Family	Theme 5: Identity as Wife and Mother (in the context of infant feeding)
Overarching Metaphors	Fear of transmission Cultural norms Knowledge	Child health Stigma Cost	Influence Confusion Trust Gratitude/judgment	Support Disclosure Truth	BF is hallmark Self-efficacy Disclosure Mistreatment
	relieves pain". "Water not in conflict with EBF".				"Stigma".
Maman et al., (2011)	"Fear of infection". "Breast milk unfit for consumption". "Milk insufficiency". "Lack money to feed myself, no milk".	"No money to buy boxes of milk". "Best for infant".	"Medical staff showed me how to breastfeed".	Family support helped maintain formula feeding.	
Ostergaard & Bula (2010)	"Social". "Looked at as wanting to kill baby by others". "Can't mixed feed- more dangerous". "Fear of transmission". "Gripe water acceptable with EBF". "Breast milk is toxic".		"Poor quality in groups".	"Power" of mother-in-laws. Feeding decisions made by grandmother.	"Alone, husband left me". "Disclosure". "Secrets". "Fear". "What if baby starts crying"? Must feel empowered. "Poisoning child".
Ramara et al., (2010)	EBF uncommon. "Okay to provide water with EBF".	Not enough "tins". Difficult to clean bottles. "Stressful". "Free formula". "Require social grant to buy formula".	Didn't give enough formula.	"Rely on family for financial support". Infant feeding support critical to follow through.	"What will happen"? Cultural norms.
Seidel et al., (2000)	"Sores in babies mouth from EBF". "Breast milk was watery".	"I was beaten". "Boyfriend said I wanted to look younger". "Baby had diarrhea, he died". "Breaks the bond". "No access to formula".	"Insist on BF". "Conflicting messages". "Tins were made unavailable".		"Motherhood is threatened by HIV". BF is norm. "Can't deviate from norm".
Sibeko et al., (2009)	"Fear of infecting infant with this sickness". "Baby	"Hide feeding from relatives". Arouse suspicion. "Unavailable". "Pressure to formula feed". "Free	"Coercive".		"Had to mix-feed". "Bear all responsibility". "What to do"? "Anxiety". "Stigma".

	Theme 1: (Influences on) EBF	Theme 2: (Influences on) EFF	Theme 3: (Role of) Healthcare Providers	Theme 4: (Role of) the Family	Theme 5: Identity as Wife and Mother (in the context of infant feeding)
Overarching Metaphors	Fear of transmission Cultural norms Knowledge	Child health Stigma Cost	Influence Confusion Trust Gratitude/judgment	Support Disclosure Truth	BF is hallmark Self-efficacy Disclosure Mistreatment
	not full from breast milk”.	formula”.			“Disclosure”.
Thairu et al., (2005)	“Must EBF, can't mix- feed”. Anxiety of making baby unhealthy.	“[formula feeding] Equivalent to announcing HIV status”. “Tins are costly”. Poverty constrains choice.	Stigmatize mothers. “Don't understand”.	“Older people at home want to see infant eating”. Economic circumstances influence decision.	“Isolated”. “I am sick”. “Stigma”. “Social disapprobation”. “Disclosure”.

Quotes are used whenever possible to represent key metaphors from each study. Short phrases as a direct interpretation from the article may also be used as a key metaphor.

¹ Quotes are used whenever possible to represent key metaphors. Short phrases may also be used as a key metaphor as a direct interpretation from the article.