

COUNSELLING HIV-INFECTED WOMEN ON INFANT FEEDING CHOICES IN RURAL SOUTH AFRICA

Rollins NC^{1,2}; Bland RM¹; Thairu L⁴, Coovadia HM³, for the Child Health Group¹

¹ Africa Centre for Health and Population Studies, Mtubatuba, KwaZulu Natal, South Africa

² Department of Paediatrics and Child Health, University of Natal, Durban, South Africa

³ Centre for HIV/AIDS Networking, University of Natal, Durban, South Africa

⁴ Department of Nutritional Anthropology, Cornell University, Ithaca, NY, USA

Short Title: Counselling on feeding options for HIV-infected women

Grant Support: This study is supported by a grant from the Wellcome Trust (Wellcome Grant #063009/Z/00/2).

The Africa Centre is supported by a core grant from the Wellcome Trust (Wellcome Grant #050534)

Corresponding author:

Dr Nigel C Rollins. The Africa Centre for Health and Population Studies, PO Box 198, Mtubatuba, KwaZulu Natal, 3935, South Africa.

e-mail: rollinsn@mrc.ac.za; fax: (+27) 35 550 7565; phone: (+27) 35 550 7500

ABSTRACT

BACKGROUND

UNAIDS guidelines on infant feeding choices for HIV-infected women promote fully informed and free choice of infant feeding methods for HIV-infected mothers and recommend that HIV-infected mothers should be given '*specific guidance in selecting the option most likely to be suitable for their situation*'. Understanding the risks and benefits of infant feeding choices available to an HIV-infected woman is complicated for policy makers, trained counsellors and most importantly the mother herself. We describe how we modified the WHO/UNICEF HIV and Infant Feeding Course because counsellors in a programme to prevent postnatal transmission of HIV in infants and young children in rural kwaZulu Natal, who had trained on the course, had difficulty communicating the concept of relative risks to mothers who, themselves, were still unable to "make choices" after counselling. We compared the appropriateness of maternal decisions against the UNAIDS guidelines and how they fed their infants in the 1st week of life. Finally, we conducted an ethnographic study to describe the perceptions of counsellors with respect to their training on HIV infection and infant feeding and the task of counselling using the approach we developed.

METHODS

Pregnant women attending 5 antenatal clinics in a rural health district in South Africa were offered confidential counselling and testing for HIV by lay counsellors. HIV-infected women were counselled individually on infant feeding choices at a separate appointment 1-2 weeks after post-test counselling. Demographic data were collected and feeding intentions were compared against 4 factors considered critical for safe replacement feeding *viz.* access to clean water, a fridge, fuel for boiling water (electricity, gas, paraffin) and a regular source of income. Individual interviews and card sorting exercises were conducted with counsellors and also with 14 HIV-infected women enrolled in the study. Free commercial infant formula was not available to HIV-infected women at the time of the study.

RESULTS

189 HIV-infected women have been counselled to date: 171 (91%) chose exclusive breastfeeding; 18 (9%) chose replacement feeding; median age - 24.8 (16,43); median parity - 1 (range 0-8). Maternal education: 7% none; 48% some primary; 45% some secondary. 28 (15%) women had access to all 4 factors necessary for safe

RF. Twenty five (13%) of these women chose exclusive breastfeeding. Of 18 (10%) women who chose replacement feeding, only 3 (2%) had all the facilities to make this option safe. All women who planned to breastfeed did initiate breastfeeding whereas, 12 (67%) of women who planned to replacement feed actually initiated breastfeeding and continued to breastfeed over the first week.

CONCLUSIONS

The majority of women chose a feeding method which was consistent with their home circumstance. Only 14% women had socio-economic conditions appropriate for safe replacement feeding. The women with facilities to enable safe RF but who chose to exclusively breastfeed, most likely did so because of the practicalities and stigma associated with complete RF. The 15 women who chose to exclusively formula feed, despite less than ideal circumstances, felt free to make this choice knowing they will be supported in it. The modified counselling algorithm facilitated women to make choices generally consistent with the UNAIDS guidelines

INTRODUCTION

Counselling is an essential and effective component of any primary prevention strategy to reduce the spread of HIV infection as well as enabling other intervention to be offered such as antiretrovirals to HIV-infected women or guidance on infant feeding practices [refs]. With regard to postnatal transmission of HIV to infants and young children, the UNAIDS guidelines on infant feeding choices for HIV-infected women recommend that when replacement feeding (RF) is not acceptable, feasible, affordable, sustainable and safe, then exclusive breastfeeding (EBF) is recommended during the first months of life [1]. The guidelines promote fully informed and free choice of infant feeding methods for HIV-infected mothers who should be given the best available information on the benefits of and the risk of HIV transmission through breastfeeding, and the risks and possible advantages of replacement feeding. The guidelines go on to recommend that HIV-infected mothers should be given *'specific guidance in selecting the option most likely to be suitable for their situation'* and allowed to make their own choices.

Balancing these risks and benefits, however, is difficult for an individual mother. For counsellors, the task of presenting information so that the mother can reach an informed decision, and adhere to it, requires skill. Training staff to understand the complexities of feeding choices takes time, expertise and dedicated supervision. Meanwhile, policy is being driven by the urgency of the HIV pandemic and the need to provide guidelines and train counsellors before evidence on infant feeding and transmission is available. In this process there is a real danger that the provision of free formula milk may by-pass the process of effective infant feeding counselling. Women may be influenced to choose RF, without due care being given to their individual situations, fears and ability to adhere to their choice.

Recognising these difficulties, the WHO developed a training course on HIV and infant feeding counselling [2]. The course covers not only the different feeding options available, including preparing home-formula from cow's milk and wet nursing, but also practical sessions on counselling skills, food hygiene and preparation, the costs of replacement feeds and management of breast health problems such as mastitis. Our experience in training lay counsellors on this course was that they assimilated theoretical knowledge and developed skills at supporting both EBF and RF. Counsellors, however, had difficulty in conveying the concept of the relative risk for child survival associated with each feeding option, and struggled to guide women to reach a specific choice. The

approach was didactic and time-consuming, risking the possibility that some women would receive counselling while others would leave before being seen. We found that the approach did not adequately ascertain the HIV-infected woman's *'situation'* nor provide the *'specific guidance'* to enable her to select the most suitable feeding practice. We therefore modified the approach while still utilising the knowledge and basic counselling skills imparted by the course.

This paper describes the approach on infant feeding counselling that we have developed and implemented in rural KwaZulu Natal. It describes the choices made by a cohort of HIV-infected women, their home circumstances and reports the opinions of a selection of HIV-infected women to the counselling. It also describes the perceptions of counsellors with respect to their training on HIV infection and infant feeding and the task of counselling using the approach we developed. Lastly, we compare the appropriateness of women's decisions to the UNAIDS guidelines [1].

POPULATION AND METHODS

Design

This was an observational cohort study of 189 HIV-infected women who were counselled on infant feeding choices and their infants followed over the first week of life. Pregnant women attending 5 antenatal clinics in a rural health district in South Africa were offered confidential counselling and testing for HIV as part of a large on-going cohort study to investigate breastfeeding and MTCT (*Mamanengane*). Women were post-test counselled and those who were HIV-infected were offered a further, individual counselling session 1-2 weeks later, to discuss options for feeding their infant following delivery. HIV-infected women were eligible for enrolment into the cohort study if they lived in the study area, were not intending to move from the area within 3 months post-delivery and were not returning to school or work within 2 months post-delivery. All counselling was provided by lay staff who had successfully completed national school exit exams and were selected following assessment of literacy, numeracy and basic counselling skills. Their training included: a 2 week HIV counselling course based on South African national guidelines for HIV counsellor training, followed by 4 weeks of supervision in the field; the WHO Breastfeeding Counselling: A Training Course (5 days) [3]; and the WHO HIV and Infant Feeding Counselling (HIFC): A Training Course (3 days) [2] the latter two courses were conducted by senior WHO trainers. At the time of this study commercial infant formula feeds were not available free of charge to HIV-infected women in the health clinics.

Personal details including age, past pregnancies and education were collected at the time of pre- and post-test counselling. Following counselling on infant feeding each woman was visited at home by a different field worker who collected information on water supply, sanitation, availability of a fridge or freezer and income. Feeding intentions were compared against 4 factors considered critical for safe RF viz. access to clean water, a fridge, fuel for boiling water (electricity, gas, paraffin) and a regular source of income. Information about pregnancy outcomes and feeding practices in the first week of life were collected at home visits in those women who had also delivered. Information on interpersonal relationships e.g. disclosure to partner or other family members was not collected.

In addition, we conducted an ethnographic study of the counsellors and a convenient selection of mothers 10 months after counsellor training and the start of the programme. In order to determine how the counsellors perceived their training, how they assessed whether women understood the information offered to them and how they perceived women's ability to make a free, informed and sustainable choices, 14 in-depth individual interviews were conducted with counsellors and card sorting exercises were performed with 4 of the counsellors. To find out about women's understanding and acceptance of the information presented to them, 14 HIV-infected women enrolled in the study were interviewed following infant feeding counselling sessions.

Demographic data and feeding intentions and practices were captured using Teleform V7.1 and analysed in SPSS V9.0 (SPSS Inc, Chicago, Ill). Basic descriptive analyses of the data were carried out using frequency distributions. Baseline data between feeding groups were compared using independent t-tests and Chi-square tests. In the ethnographic study all interviews were tape-recorded and transcribed verbatim. Almost all interviews (5/14 for the counsellors and 14/14 for the mothers) were carried out in Zulu. Data were first displayed in a matrix in which responses were clustered, facilitating comparison among respondents [4]. Content was then analysed using key words in context and portions of transcripts analysed for processes, assumptions and ideas [5].

The study was approved by the ethics committee of the University of Natal, Durban.

HIV and Infant Feeding counselling approach

The WHO HIFC approach starts by presenting a wide range of feeding alternatives and suggests a method to enable women to make an informed choice. The advantages and disadvantages of 5-6 possible infant feeding practices are presented and women are asked to comment on each option in turn. At the end of the session women are asked to choose one feeding practice. Our counsellors found that they tended to overwhelm women with all the options available and at the end of the session women still asked for explicit advice on how they should feed their children.

We modified the counselling approach to first consider the woman's feeding intention in the light of her known HIV status and then to explore the appropriateness of this intention based on her home circumstances and options available (Figure 1). We also developed a visual tool to focus discussion on home circumstances and personal options (Figure 2). This tool is used at the discretion of the counsellor if she thinks that it will assist the woman to assess her circumstances.

Our method starts with a brief discussion about infant feeding over the first 12 months of life and the relationship between nutrition and good health (Figure 1). Mothers are recommended to either EBF or RF and to avoid mix feeding in the first 4-6 months. EBF is defined as giving the infant no other food or drink, not even water, apart from breastmilk (including expressed breastmilk), with the exception of drops or syrup consisting of vitamins, mineral supplements or prescribed medications [ref]. RF means the process of feeding a child who is not receiving any breastmilk with a diet that provides all the nutrients that the child needs [ref]. We define mixed feeding as giving breastmilk with any other fluids or feeds, including non-prescribed medications. A woman is then asked how she intends to feed her child in the light of her HIV status. Her choice of milk for the first 6 months of the child's life is explored to understand what she means by either breastfeeding or replacement feeding; to determine whether it is based on experience with previous children or family recommendations; whether it would be mixed or exclusive; the planned duration of giving this milk and if she plans to return to work or school. Using this as a starting point we affirm that our joint goal is to have a healthy living child after 1-2 years; to avoid HIV transmission and also avoid serious illnesses like diarrhoea, pneumonia and malnutrition. Highlighting the need for exclusivity of feeding practice, the risks and advantages of each feeding practice are then discussed. The counsellor then explores the feasibility of the woman's intention sometimes using a simple chart to focus discussion on home circumstances, past experiences, family expectations, coping skills and

likelihood of disclosing HIV status to at least one individual at home. The counsellor ascertains the appropriateness of the woman's intention and gives relevant information e.g. heat-treating breastmilk, or informs about other replacement milks. If her intention seems consistent with her circumstances the counsellor affirms the woman's intention but also mentions that there are alternatives which other women may choose in their circumstances. If the woman's circumstances do not favour her intention or a better practice may be feasible e.g. the woman has the conditions for giving replacement feeds safely, then the counsellor discusses these other feeding options in detail. The counsellor encourages the woman once she has made her decision (not always at this first session) and offers further opportunities for discussion before delivery and practical support after delivery. If a woman is unsure about how she wants to feed her child the counsellor starts by giving information about the relative risks of transmission associated with each feeding type and then explores the mothers home circumstances and options available.

RESULTS

One hundred and eighty nine HIV-infected pregnant women were enrolled between September 2001 and March 2002 and antenatal data were collected on all women. To date, 125 women have delivered live-born infants, 38 mother:infant pairs are no longer being followed due to miscarriage, stillbirth, maternal or neonatal death, or loss to follow-up / withdrawal, and 26 have not yet delivered. Table 1 shows the characteristics of the enrolled women.

One hundred and seventy one women (91%) intended to EBF while only 18 (9%) planned to offer some form of RF (17 intended to exclusively formula feed and 1 woman intended to give modified cow's milk). There was no significant correlation between women's intended feeding practice and age, highest level of education achieved, number of previous live-born infants, gestation at time of counselling, access to safe water supply, water supply within 50 m of house, material with which house was made of, type of toilet used by household, type of fuel used for cooking by household, access to fridge or whether household had a regular source of income. Whether the mother was the main income provider was significantly associated with an intention to give commercial infant formula ($p=0.028$).

Table 2 presents the feeding intention of women and their access to conditions considered necessary for safe replacement feeding. Less than half of all women had access to piped water either into their own homes or available at a public water stand. Table 3 presents the cumulative number of conditions available to women in each feeding group. Most women did not have all four conditions to facilitate safe replacement feeding. Of the 28 (15%) women who did have access to all four conditions only 3 (2%) planned to give RF. If access to regular income is removed from these conditions then 39 women would have all three conditions available. Thirty six of these women intended to EBF and 3 planned to RF. Our counsellors reported that the remaining 25 (13%) women who planned to EBF were concerned with the stigma and practicalities of avoiding breastfeeding altogether. Fifteen women (8%) planned to RF even though they had less than ideal conditions for safe RF.

Table 4 shows how women fed their children in the first week after delivery compared with their intention. All mothers who stated that they intended to EBF initiated and maintained EBF at least for the first week; 12 (71%) of mothers who stated an intention to RF initiated breastfeeding and continued to breastfeed during the first week of life. The difference between intention and practice was highly significant ($P < 0.0001$, Fisher's exact test).

Because of the distribution of actual feeding practices it was not possible, however, to fit a logistic regression model with this dataset. The positive predictive value that a women who stated an intention to breastfeed to actually initiate breastfeeding was 100% while only 28% of women who planned to RF initiated this feeding practice.

Anecdotal evidence from our counsellors suggests that the women who intended to RF were so fearful of transmitting HIV to their infants that they wanted to completely avoid breastfeeding. One counsellor noted:

"[they] are really scared, they don't even want to take chances, so they just say please please, I breastfed before, I didn't know, so I am just going to formula feed."

In the study, women who had planned to formula feeding felt free to make this choice following the counselling session knowing that they would be supported i.e. demonstrations of safe preparation, regular growth monitoring and review of feeding practices post-natally. One woman reported her experience with formula feeding saying:

"they said as I am formula feeding my baby, the bottle must be kept clean at all times. Put them in hot water and also that I must change them, I mustn't use one bottle."

Other counsellors reported that women planned to BF because of fear of inadvertent disclosure of their HIV status, particularly in hospitals.

“some [mothers] will choose formula, and then you [counsellor] find them in hospital they are breastfeeding, so I don’t even ask because you find others get embarrassed [...] you find that they, in the hospitals, they call them baby friendly, they promote breastfeeding and nothing else, so mothers think ah, rather than explaining I am HIV positive they don’t want their status known to everybody, so they will say oh well, fine, let me give the breast feed [...] around here it’s still a stigma, HIV is still stigmatised, they haven’t got to the stage where it’s accepted just like any other disease.”

Another woman who had chosen formula feeding expressed her frustration saying:

“.. when they are taking blood there is a disease they found in me so I decided I must formula feed my baby [...], the breastmilk I believe in it because it’s the thing I am used to but...[silence]....”

This woman then noted her family’s reaction when she chose formula feeding saying:

“they became very worried as I am giving formula, they said I am expected to breastfeed my baby.”

Women seemed to be very favourable to the counselling approach and felt that they were being allowed to decide how to feed their babies. One woman who had chosen breastfeeding reported:

“there is something very helpful if they advise us, sometimes I learn what I have not known before [...] They communicate good with us.”

Finally, one woman observed:

“we choose for ourselves, they teach us and you decide whether all that they taught you is relevant or you can take it.”

In the ethnographic study, we found that counsellors were happy with the training they received. One counsellor discussed her job and how she found the training relevant saying:

“[...] I think it is an interesting job, but it is very challenging every now and then, [...] we find it very challenging, but they train you, I think the training was so good, they covered all different things related to the job, we have more information that the clients will want, so it was an interesting training”

Counsellors also seemed to believe their job required them to allow women to make free and informed choices.

When asked to describe their jobs, they often used phrases such as:

“ok, [...] the job I am doing here [...] is to make the mothers do informative choice on how to feed their babies and help them along that, whatever they have chosen,”

This suggested counsellors believed that allowing women to make free and informed choices was intricately linked with what their job required them to do. Counsellors commented that it was up to the mother to make the decision on how to feed her child. One counsellor noted:

“not that I try to coerce them or try to make them think that ..but as I said, informed choice, informed choice, so the mother weighs her ability to formula feed and then she says, ah, sister, I give up, let me just take breastfeeding”

DISCUSSION

Our counselling approach was effective, in most cases, in matching the intention of HIV-infected women with their physical conditions. These conditions, however, did not appear to be the primary determinant of this intention. Fifteen percent of women had the basic resource such as safe water, a fuel source and income that would have supported the use of a RF; in spite of this, 89% did not choose to do so but rather intended to initiate BF. A woman's intention to EBF correlated in all cases with the initiation of breastfeeding whereas only 27% of women who planned to RF actually managed to do so in the first week postnatally

This study demonstrates that counselling HIV-infected women on infant feeding practices and the reasons for their choices are complex for several reasons. Most counselling approaches are based on a client-centred model that assumes that the woman is able to enforce her preferred choice. This study demonstrates that criteria, considered to be obvious determinants of practice are not always the principal basis of intention or practice. Our counselling approach was effective, in most cases, in matching women's intention with their physical resources.

Although most women had less than optimal physical resources available for safe RF there were several women who chose this option. Conversely, most women who had adequate resources to provide safe RF actually planned to initiate BF. Factors such as women's previous experience or physical resources were not clearly associated with intention but these were determined either by their own insights regarding the benefits of BF or by factors not quantified in this study such as family acceptability or the fear of inadvertent disclosure of HIV status.

Women who lived in households with a regular source of income but who did not have direct control over these funds for the most part planned to breastfeed. In contrast, women who were the main income provider tended to choose formula feeding as their intended feeding practice. This discrepancy exemplifies the status of women in many societies, their dependency and disempowerment, and lack of freedom to choose one of the most fundamental of human behaviours, namely how to feed their newborn child. In spite of their intention to RF most of these women initiated breastfeeding immediately after delivery suggesting that their home or community would not support their choice. When regular income was removed as a condition for safe RF e.g. if commercial infant formula were provided as part of a programme to prevent postnatal transmission of HIV in infants, then 39 women had access to safe water, a fridge or freezer and a suitable fuel source for heating water. The vast majority of these women still intended to EBF suggesting that access to regular finances was not the main influence in their decision whether to EBF or RF. While we did not explore the influence of free provision of infant formula on women's choices, the fact that many women who planned to RF subsequently initiated BF at delivery suggests that external influence such as community perceptions are at least as important as finances. The provision of free infant formula, rather than guaranteeing exclusive RF is likely, therefore, to result in mixed breastfeeding because the woman would not be able to access counselling on EBF if it were available and would still feel compelled to BF because of family expectations.

The importance of community perceptions is substantiated by the finding that women's intentions did not differ according to their level of education, age or other socio-demographic variables and suggests that breastfeeding is deeply embedded within Zulu culture. In this area of KwaZulu Natal the failure to breastfeed even for a period of time is viewed negatively and has negative connotations on the caring practices of the mother – *“she is a bad mother”* or *“she deserves to be beaten”*.

Our counselling approach seems to be effective in guiding women to an intention that she considers likely to be viable at home. It avoids the complex task of communicating the concept of relative risks for each feeding option while still offering full information; the approach focuses on the woman viewpoints and her insights to the feasibility of a given feeding practice. It avoids a set of monologues that may be tedious for the counsellor and that place the woman in a student:teacher role with the counsellor. We need to further evaluate whether this approach promotes exclusivity of feeding practice beyond the first week of life, especially if infant formula is

provided free through the national HIV prevention programme. We have not yet been able to include other family members in these sessions which may improve exclusive adherence to whichever feeding practice is adopted.

REFERENCES

Efficacy of voluntary HIV-1 counselling and testing in Kenya, Tanzania and Trinidad: a randomized trial. The Voluntary HIV-1 Counselling and Testing Efficacy Study Group. *Lancet* 2000;356(9224):103-12

1. WHO. New data on the prevention of mother-to-child transmission of HIV and their policy implications: conclusions and recommendations. WHO technical consultation on behalf of the UNFPA/UNICEF/WHO/UNAIDS Inter-agency task team on mother-to-child transmission of HIV. Geneva. October 2000. WHO Dept of Reproductive Health and Research.
http://whqlibdoc.who.int/hq/2001/WHO_RHR_01.28.pdf
2. WHO HIV and infant feeding counselling course
3. WHO/UNICEF. Breastfeeding counselling: a training course. Trainers guide. Division of diarrhoeal and acute respiratory disease control, WHO/CDR/93.3-6 and UNICEF/NUT/93. Geneva: WHO, 1993
4. Miles MB, Huberman Michael A. *Qualitative data analysis: an expanded sourcebook*. 2nd edition ed: Sage publications: Newbury Park, 1994.
5. Ryan GW, Bernard H. Data management and analysis methods. In: Sage, ed. *Handbook of qualitative research*, 2000:669-802.
6. WHO. *Breastfeeding and Replacement Feeding Practices in the Context of Mother-to-Child Transmission of HIV: An Assessment Tool for Research*. Geneva: World Health Organisation, 2001. WHO/RHR/01.12 (WHO/CAH/01.21) October 2001 <http://www.who.int/child-adolescent-health>
- 7.

TABLE 1: Characteristics of mothers enrolled

CHARACTERISTIC	N = 189
Mean age (range)	24.8 (16,43)
Median parity (range)	1 (0, 8)
Highest educational level achieved: (%)	
None	13 (7)
Some primary	91 (48)
Some secondary	47 (25)
Completed secondary	38 (20)
Safe water available* (%)	88 (47)
Water supply within 50 m of homestead (%)	67 (35)
Water-borne toilet or ventilated pit latrine available (%)	19 (10)
Electricity, gas or paraffin used for cooking (%)	116 (61)
Access to fridge or freezer (%)	72 (38)
Regular income available to household (%)	132 (70)
Mother is main income provider (%)	20 (11)

*Safe water = piped water either to a public stand or into the household or household yard

TABLE 2. ACCESS TO CONDITIONS CONSIDERED NECESSARY FOR SAFE REPLACEMENT FEEDING

	N	SAFE WATER (%)	FRIDGE (%)	ELECTRICITY, GAS OR PARAFIN (%)	REGULAR INCOME AVAILABLE TO HOUSEHOLD (%)	MOTHER IS MAIN SOURCE OF INCOME (%)
FEEDING INTENTION						
EXCLUSIVE BREASTFEEDING	171	79 (46)	65 (38)	105 (61)	123 (72)	15 (9)
EXCLUSIVE REPLACEMENT FEEDING	18	9 (50)	7 (39)	12 (67)	14 (78)	5 (28)

TABLE 3. NUMBER OF CONDITIONS REQUIRED FOR SAFE RF AVAILABLE TO WOMAN

	N	NUMBER OF CONDITIONS AVAILABLE TO WOMAN*				
		NONE N (%)	1 N (%)	2 N (%)	3 N (%)	4 N (%)
FEEDING INTENTION						
EBF	171	19 (11)	35 (21)	40 (23)	52 (30)	25 (15)
RF	18	1 (6)	3 (17)	6 (33)	5 (27)	3 (17)

* i.e. any combination of safe water, access to fridge/freezer, fuel other than wood and regular income

TABLE 4. FEEDING INTENTION (ANTENATAL) VERSUS PRACTICE IN THE FIRST WEEK OF LIFE

FEEDING INTENTION	N	FEEDING PRACTICE IN 1 ST WEEK			
		EBF	RF	LOST TO FOLLOW-UP*	NOT YET DELIVERED
		N (%)	N (%)	N (%)	N (%)
EBF	171	108 (63)	0 (0)	38 (22)	25 (15)
RF	18	12 (67)	5 (27)	0 (0)	1 (6)

* Lost to follow-up includes miscarriages, stillbirths, early neonatal deaths, maternal deaths, loss to follow-up and withdrawal of consent

FIGURE LEGENDS:

Figure 1: Counselling on infant feeding choices

Figure 2. Counselling tool to explore home circumstances

FIGURE 1. COUNSELLING ON INFANT FEEDING CHOICES

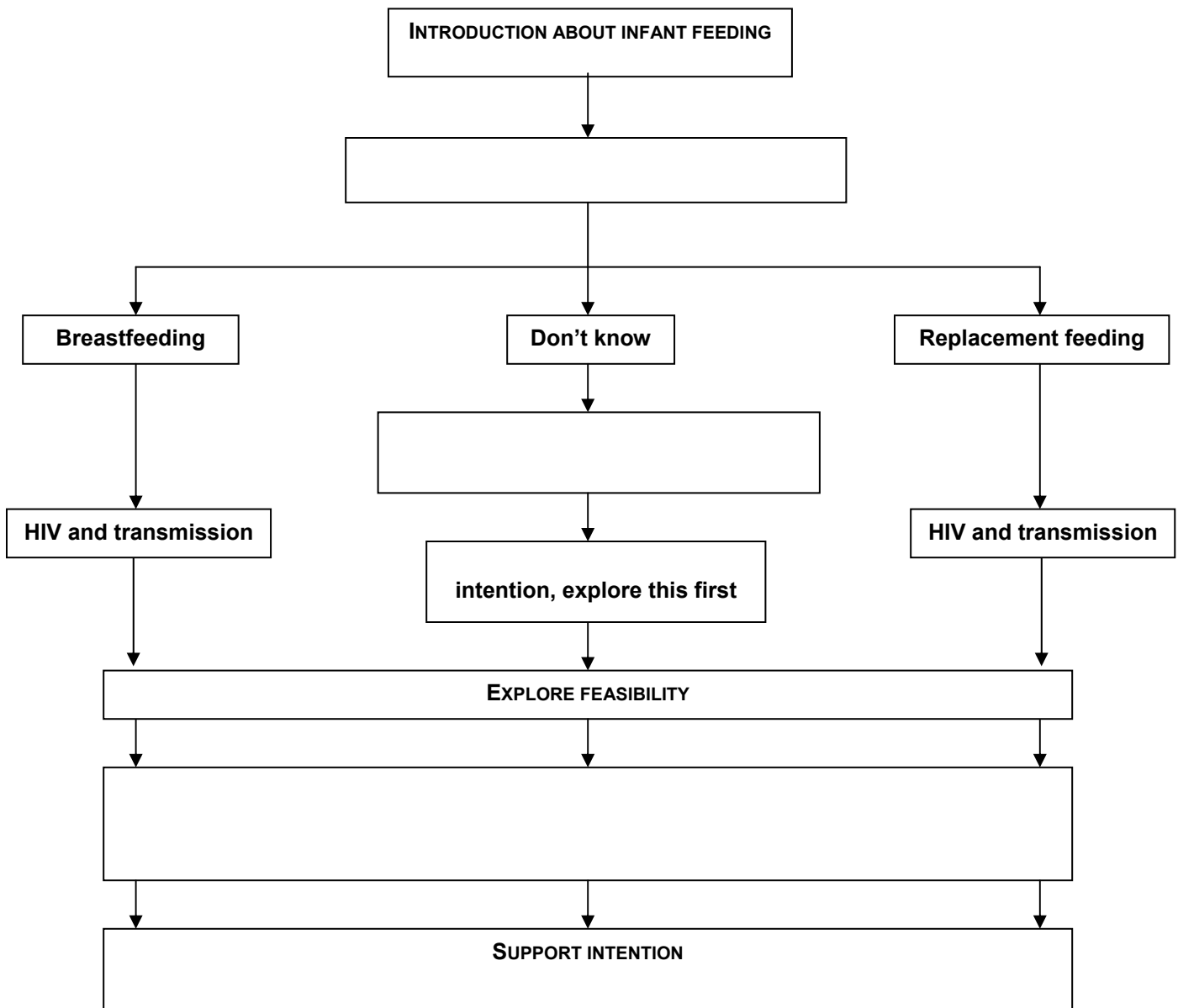


Figure 2. Visual tool to focus discussion on home circumstances and personal options

	BREASTFEED	UNSURE	REPLACEMENT FEEDS
WATER SUPPLY		Public standpipe	
SANITATION		VIP latrine	
SUPPLY OF FORMULA		R150+ (\$15+) available for formula most months	
STORAGE		Access to fridge with regular electricity supply, but not at home	
PREPARATION AND FUEL		Able to boil water at every feed with effort	
NIGHT FEEDS		Other family member can look after baby at night	
FAMILY AND COMMUNITY	Family unaware of HIV status	Family supportive of whatever decision the mother will make	status and willing to help with feeding

The above conditions, in addition to issues of coping and ability to implement choice are discussed with the mother. The mother can see for herself what is the balance of conditions available for her; the counsellor does not count up the number of conditions available to see if the woman she ‘passes’ or not.

This paper was written on behalf of the Child Health Group of the Africa Centre for Health and Population Studies: Bennish ML, Coutsooudis A, Govender C, Kauchali S, Lerobane M, Myeni Z, Newell ML, Ngidi A, Papathakis P, Solarsh G and Van den Broeck J

Acknowledgements

We thank the mothers and counsellors who took part in this study; the staff in the local clinics and hospital who assisted with the implementation of the study; and the dedicated staff from the Child Health Team. We wish to thank Jane Lucas for her valuable insights and encouragement.