

# Challenges in the implementation of the Infant and Young Child Feeding policy to prevent mother-to-child transmission of human immunodeficiency virus in the Nelson Mandela Bay District

Mkontwana P, Masters in Health and Welfare Management

HIV and AIDS Research Unit, Nelson Mandela Metropolitan University; Port Elizabeth Hospital Complex

Steenkamp L, PhD(Dietetics), Research Associate, HIV and AIDS Research Unit, Nelson Mandela Metropolitan University

Von der Marwitz J, DCur, Director, HIV and AIDS Research Unit, Nelson Mandela Metropolitan University

Correspondence to: Liana Steenkamp, e-mail: liana.steenkamp@nmmu.ac.za

Keywords: PMTCT, IYCF, HIV, policy, healthcare facilities

## Abstract

**Objective:** To assess the Infant and Young Child Feeding (IYCF) policy implementation among healthcare workers working at the Nelson Mandela Bay District (NMBD) public healthcare facilities.

**Design:** Descriptive survey using quantitative closed structured questionnaires.

**Setting:** Nursing professionals (n = 32) rendering maternal and child health services in 19 permanent NMBD clinics were included in a convenience sample in October 2011.

**Method:** The closed, structured questionnaire was developed based on statements contained within the 2007 IYCF policy and administered by one interviewer. Ethics approval was obtained and respondents had to provide informed written consent. Data were analysed by means of descriptive and differential statistics.

**Results:** Sixty-three per cent of nursing professionals were older than 40 years of age and more than half had already completed the Integrated Management of Childhood Illness (IMCI) and 20-hour IYCF training course. Respondents achieved a high mean score of 8.07 on knowledge of infant feeding in the context of human immunodeficiency virus (HIV). However, no association could be demonstrated between knowledge scores and previous training. Despite high scores on perceptions of the importance of IYCF counselling, 56% of the participants reported that they had never seen the IYCF policy before.

**Conclusion:** Relevant training in IYCF in the context of HIV, the availability of IYCF policy guidelines and monitoring of counselling and training of health professionals and volunteers, are some of the challenges that need to be addressed to improve implementation of IYCF policy in the NMBD district.

© Peer reviewed. (Submitted: 2012-09-05. Accepted: 2013-02-10.) © SAJCN

S Afr J Clin Nutr 2013;26(2):25-32

## Introduction

Approximately 90% of human immunodeficiency virus (HIV) infections in children are acquired through mother-to-child transmission (MTCT).<sup>1</sup> Thus, prevention of mother-to-child transmission (PMTCT) of HIV is one of the greatest challenges in HIV management. Vertical transmission of HIV can take place within the intrauterine environment, during delivery, or through breastfeeding.<sup>2</sup> HIV transmission via breastfeeding varies depending on the duration and pattern of breastfeeding, as well as maternal health.<sup>3</sup> In resource-limited settings, infant feeding has been found to be the weakest link in the PMTCT.<sup>4</sup> In 2007, an Infant and Young Child Feeding (IYCF) policy was developed in South Africa.<sup>5</sup> One of the objectives was to provide evidence-based information on HIV and infant feeding to pregnant women and support them in their decisions pertaining to infant feeding choice. According to the 2009 Health Systems

Trust data,<sup>6</sup> the HIV prevalence among pregnant women attending antenatal clinics in the Nelson Mandela Bay District (NMBD) was 30.7%, a figure that is higher than both the Eastern Cape's provincial prevalence of 28.1%, and the South African national prevalence of 29.4%. This may result in an increased risk of MTCT. It has been shown that the risk of MTCT can be significantly reduced from an estimated 14-17% in breastfed infants without antiretroviral therapy (ART) interventions, to only 2% over six months of exclusive breastfeeding, if either the mother or the infant is on ART.<sup>7</sup> This highlights the importance of the implementation of the IYCF policy within the NMBD in order to contribute to the reduction of MTCT of HIV in this vulnerable group.

Infant feeding guidelines in the context of HIV, and endorsed by the World Health Organization (WHO), have changed several times since the 1990s. In 2003, a global strategy for infant and young

child feeding was developed by the WHO and the United Nations Children's Fund.<sup>8</sup> This strategy emphasised the need to balance the absolute risk of HIV transmission via breastfeeding against the risk of morbidity and mortality when children are not breastfed.

In 2007, the WHO published an HIV and infant feeding update<sup>9</sup> which reviewed evidence that exclusive breastfeeding carries a lower risk of HIV transmission than mixed feeding. This update highlighted that "health workers should be reminded that exclusive breastfeeding for the first six months is the gold standard for babies", and that "any benefits of shortening exclusive breastfeeding to reduce HIV transmission are unlikely to overcome the risk of morbidity and mortality from early cessation before six months", unless the women can make a safe transition to replacement feeding should they meet AFASS (accessible, feasible, affordable, sustainable and safe) during the first six months of their babies' lives.

According to a review of data by Goga<sup>4</sup> in 2009, challenges in the implementation of IYCF policies at that stage included the following:

- Healthcare provider confusion about infant feeding, especially in relation to HIV transmission risk via breastfeeding.
- Poor support for infant feeding counsellors.
- Poor counselling skills.
- Discord between feeding recommendations and the sociocultural context in which infant feeding occurs. Similar experiences, such as a low level of confidence among trained staff in counselling women reporting difficulties with breastfeeding, have been documented in southern Africa.<sup>10</sup>

In 2010, following research outcomes<sup>11</sup> that demonstrated the safety of ARVs during breastfeeding, the WHO published infant feeding guidelines in the context of HIV.<sup>12</sup> The guidelines recommended that in all countries where breastfeeding is the safer option, HIV-infected mothers should breastfeed their infants exclusively for the first six months of life. Thereafter, appropriate complementary foods should be introduced while breastfeeding is continued, together with appropriate ARV prophylaxis for the mother or the baby for at least 12 months.

The South African National Department of Health, together with the South African National AIDS Council, adopted the 2010 WHO infant feeding guidelines and incorporated these into the 2010 clinical guidelines for PMTCT.<sup>13</sup> Since then, health facilities in South Africa have been advised to support HIV-infected mothers to breastfeed and focus on ensuring that the mothers adhere to the recommended ARV regimens in the PMTCT.<sup>14</sup> This form of "protected breastfeeding" also avoids the challenges of early weaning and maximises the benefits of optimal nutrition in the first 12 months.<sup>14,15</sup>

One of the challenges in promoting breastfeeding among HIV-infected mothers has been the lack of PMTCT knowledge among community health workers.<sup>3,15</sup> Findings from a rapid assessment of infant feeding policy and programmes performed in Botswana, Kenya, Malawi and Uganda, revealed that health workers, despite having received training on PMTCT, were unable to correctly estimate the risk of HIV transmission from breastfeeding.<sup>16</sup> The perception of overestimated HIV transmission via breastfeeding, as well as the lack

of confidence in dealing with mothers' breastfeeding challenges,<sup>17,18</sup> can compromise the implementation of the IYCF policy, and can be a barrier to breastfeeding promotion among HIV-infected women. Apart from inadequate knowledge, the culture of mixed feeding, the early introduction of solids and low rates of exclusive breastfeeding in South African communities,<sup>19</sup> also pose a threat to the success of the implementation of the new PMTCT guidelines.

Quality counselling in all healthcare facilities, backed by similar messages at community level, is required to ensure that MTCT is reduced through improved infant feeding. Currently, Integrated Management of Childhood Illness (IMCI) training in the Eastern Cape province includes at least 60-90 minutes of relevant IYCF training, depending on trainees' level of knowledge. Apart from that, all healthcare professionals who are involved in maternal and child health are encouraged to undertake the 20-hour IYCF course (previously the Lactation Management Course), which covers the IYCF in the context of HIV.

Research to assess the adequacy of resources for PMTCT programme implementation in the NMBD has become essential to ensure the promotion of sound infant feeding in the context of HIV. In this study, the researchers aimed to assess IYCF policy implementation in the PMTCT programme, the related knowledge and attitudes of healthcare workers, and identification of challenges that need to be addressed, in order to improve the programme.

## Method

A convenience sampling method was used to gather in-depth information from nurses (n = 32) who consented to participate in the research. Respondents included nurses rendering maternal and child health services in 19 of the 49 permanent NMBD public healthcare facilities. This study, conducted in October 2011, was in the form of a descriptive survey. Inclusion criteria were limited to nurses rendering maternal and child health services in maternity obstetric units, paediatric sections, well baby clinics and PMTCT sites, and who had been stationed in these areas for at least six months. Mobile clinics, health posts and satellite clinics were excluded from the study.

Ethical approval was obtained from the Research Ethics Committee (Human), Nelson Mandela Metropolitan University (NMMU) (H11-RT1-HIV-004). Additional approval was obtained from the Epidemiology and Research Directorate of the Eastern Cape Department of Health and the NMBD district manager, as well as the Nelson Mandela Metropolitan Municipality's health portfolio manager and public health directorates.

Variables defined to meet the aim and objectives included:

- Knowledge of the IYCF in the context of HIV.
- Perception of the importance of IYCF education and counselling given to mothers, as well as the frequency thereof.
- Level of agreement of healthcare workers on IYCF follow-up and support.
- The use of commercial infant formula.
- Capacity building and staff training.
- Monitoring and evaluation of the IYCF policy.

This information was obtained by means of a personal interview with the researcher. Questions were answered from a standardised close-structured questionnaire. The questionnaire was pre-coded and measured variables based on the research questions. It was developed by including questions based on the statements in Section 6 (infant feeding information during antenatal and postnatal care), Section 7 (use of commercial formula) and Section 8 (interventions at different levels) of the 2007 IYCF policy.<sup>20</sup>

These questions extended to:

- An assessment of the knowledge of healthcare workers, based on background information.
- The importance and frequency of education given to women during antenatal care, intrapartum and postnatal care.
- Follow-up and support for mothers in postnatal services with regard to infants and young children.
- The use of commercial formula and questions relating to Section 8.
- Interventions at different levels, such as capacity building and training, as well as monitoring.
- Evaluation of the implementation of the IYCF policy.

The research design was piloted by selecting a convenience sample of 16 nurses in the paediatric, maternal and neonatal clinics who were based at the government hospitals. Following feedback from the pilot study, some questions were rephrased in order to improve understanding of the questionnaire. However, it is important to note that all questionnaires were completed during personal interviews with the researcher who explained the statements or questions to prevent misinterpretation.

At least one, but not more than three, participants per facility, were included. The first three health workers in each clinic to give written informed consent and satisfy the inclusion criteria were included in the sample.

For the purpose of this study, “poor knowledge” referred to an achievement of a total score of 0-3, “fair knowledge” 4-6, “good knowledge” 7-8, and “very good knowledge” 9-10. These cut-offs were based on the WHO’s tool for assessing national practices, policies and programmes that relate to infant and young child feeding.<sup>21</sup> Questions were aimed at gathering knowledge about health workers’ understanding of the role of malnutrition in child survival, MTCT resulting from breastfeeding, and what exclusive breastfeeding means, as well as health workers’ understanding of factors that might impact negatively on breastfeeding and child health.

A semantic differential was used to rate statements on health workers’ perceptions of importance relating to counselling of women from either “unimportant” (1) to “very important” (5). Statements were based on Section 6 of the IYCF policy.<sup>20</sup>

Statements on follow-up and support, as well as the use of infant formula, were measured by means of a Likert scale ranging from “strongly disagree” (1) to “strongly agree” (5), and from “never” (1) to “always” (5). All questions were based on IYCF policy statements. Staff were asked to rate statements relating to the frequency of

education and counselling of women from either “never” (1) to “every day” (5), while capacity building and staff training were ascertained by asking questions about training and orientation on IYCF policy, where a “yes” (1) or “no” (2) answer was expected.

Monitoring and evaluation of the IYCF policy was measured by asking staff to rate whether different interventions were in place to ensure proper implementation, ranging from “never” (1) to “always” (5).

Categorical variables, such as gender and “yes” or “no” answers, were measured according to nominal scale. Continuous variables such as counselling and support given to women, as well as administration of infant formula, were measured by means of an ordinal scale using a 5-point Likert scale. All measured scores were converted to a 10-point scale for ease of comparison.

Data capturing of pre-coded variables and cleaning were performed using Microsoft Office® Excel® 2007. Data were analysed by means of descriptive and differential statistics, such as mean, median or mode. Variation around mean and median was measured by means of standard deviation (SD). Internal consistency of data was verified by using Cronbach’s alpha.

## Results

### Demographics

Ninety-four per cent ( $n = 30$ ) of the total sample ( $n = 32$ ) were female. Sixty-three per cent ( $n = 20$ ) were older than 40 years of age. Eighty-eight per cent ( $n = 28$ ) had been working in their current position (maternal and child health) for less than five years. Forty-four per cent of respondents ( $n = 14$ ) worked in medium-sized clinics, while 56% ( $n = 18$ ) were employed in large clinics. Prior to the study, 53% ( $n = 17$ ) of respondents reported that they had completed IMCI training, 38% ( $n = 12$ ) were not yet trained, and 9% ( $n = 3$ ) were still undergoing training. However, more than half of those who were not yet trained in IMCI had already completed the 20-hour IYCF course ( $n = 7$ ).

### Health workers’ knowledge of infant feeding in the context of human immunodeficiency virus

Responses to knowledge questions are reflected in Table I. The mean score out of a possible total of 10 was 8.07 ( $SD = 1.41$ ). Sixty-nine per cent scored more than 70% ( $n = 22$ ). Of the nurses who had already completed IMCI training, 35% ( $n = 6$ ) scored less than 70%. Of the 18 nurses who had already completed the 20-hour IYCF course, 22% ( $n = 4$ ) scored less than 70%, while 33% scored 100%.

Despite the high mean score, 44% responded incorrectly to the statement that “the majority of deaths in children under five years are due to malnutrition resulting from a lack of optimal breastfeeding”. Half of them ( $n = 7$ ) had not yet received IMCI training. Of the 35% of respondents who responded correctly to the statement that “HIV-exposed babies who are formula fed have a higher mortality than babies who are breastfed” (Table I), the majority ( $n = 6$ ) had not yet been trained. However, 22% of nurses who had completed the 20-hour IYCF course also disagreed or were unsure about that statement.

**Table I:** Health workers' (n = 32) knowledge on infant feeding in the context of human immunodeficiency virus

Knowledge	True		False		Unsure	
	n	%	n	%	n	%
Most deaths in children under five years of age are due to malnutrition caused by the lack of optimal breastfeeding	18	56	12	38	2	6
By the age of three months, HIV-exposed babies who are formula-fed have a higher death rate than those who are breastfed	21	66	7	22	4	13
A small percentage of babies will receive HIV postnatally after five months of exclusive breastfeeding	25	78	3	9	4	13
A breastfeeding mother should never give other food, milk or drink to a baby who is younger than six months old	32	100	0	0	0	0
A formula-feeding mother should never give any other food or drink, other than infant formula, to a baby who is younger than six months old	31	97	1	3	0	0
Giving dummies and teats can cause health problems in breastfed babies	32	100	0	0	0	0
Giving dummies and teats can cause health problems in formula-fed babies	32	100	0	0	0	0
Expressed breast milk should be given using a cup, even if the mother is HIV-negative	31	97	1	3	0	0
Cup feeding is recommended when a baby is exclusively breastfed	32	100	0	0	0	0
Infant formula should not be given to breastfed babies, even if the mother says that she has insufficient breast milk	29	91	3	9	0	0

HIV: human immunodeficiency virus

**Table II:** Health workers' (n = 32) perceptions of the importance of Infant and Young Child Feeding education and counselling topics

Education	Not important		2		3		4		Very important	
	n	%	n	%	n	%	n	%	n	%
Pregnant women need to be educated on exclusive breastfeeding for six months	0	0	0	0	0	0	2	6	30	94
Pregnant women should be encouraged to continue breastfeeding for two years and beyond	2	6	1	3	6	19	9	28	14	44
HIV-positive women must receive individual counselling on infant feeding options to enable them to make an informed choice	0	0	0	0	2	6	2	6	28	88
HIV-positive women should receive counselling on the risks and benefits of infant feeding options	0	0	0	0	0	0	2	6	30	94
Breastfeeding should be recommended to HIV-positive women unless infant formula is AFASS	0	0	2	6	1	3	1	3	28	88
Women who decide to breastfeed need to receive a demonstration on breast positioning and attachment	0	0	0	0	0	0	0	0	32	100
Women who decide to breastfeed have to be taught by demonstration how to maintain lactation when separated from their babies	0	0	0	0	0	0	3	9	29	91
Women should be informed of available infant feeding support groups in the community	1	3	0	0	3	9	5	16	23	72
HIV-positive women who chose to formula feed must receive a demonstration on how to prepare it	0	0	0	0	0	0	1	3	31	97
Women who are formula feeding their babies have to be encouraged to give formula using a cup, not a bottle	0	0	1	3	0	0	0	0	31	97
When free infant formula is provided, it needs to be given for at least six months	0	0	0	0	2	6	1	3	29	91
Mothers must be educated on the dangers of mixed feeding	0	0	0	0	0	0	0	0	32	100
HIV-negative women need counselling on ways to prevent new HIV infection	0	0	0	0	0	0	1	3	31	97
HIV-negative women must be informed about the postnatal transmission of HIV	0	0	0	0	0	0	1	3	31	97
Parents and caregivers should receive information on the correct age at which to introduce complementary foods to babies	0	0	0	0	0	0	2	6	30	94

AFASS: acceptable, feasible, affordable, sustainable and safe to use, HIV: human immunodeficiency virus

**Table III:** Health workers' perceptions (n = 32) of infant feeding follow-up and support given to human immunodeficiency virus-infected women

Follow-up and support	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	n	%	n	%	n	%	n	%	n	%
Women are supported for their infant feeding choices	0	0	1	3	1	3	13	41	17	53
Growth monitoring is performed during each child's visit to this facility	0	0	0	0	0	0	1	3	31	97
Mothers who chose infant formula are shown how to prepare and give it	1	3	2	6	3	9	9	28	17	53
Maternal health and nutrition status is assessed during each clinic visit	0	0	0	0	3	9	11	34	18	56
Nutrition support in the form of food supplements is given to breastfeeding mothers who are malnourished	1	3	1	3	5	16	4	13	21	66
The mothers of babies with positive PCR are encouraged to continue breastfeeding	3	9	3	9	4	13	4	13	18	56
The mothers of babies whose PCR is negative are counselled on feeding options and informed of the risks of postnatal HIV transmission	0	0	0	0	1	3	3	9	28	88
Early breastfeeding cessation occurs when AFASS is met	1	3	10	31	4	13	3	9	14	44
Socio-economic circumstances guide HIV-positive mothers' decisions to stop breastfeeding	1	3	10	31	4	13	5	16	12	38
Amounts of infant feeding required by the infant are reviewed at visits to the facility	3	9	13	41	0	0	9	28	7	22

AFASS: accessible, feasible, affordable, sustainable and safe, HIV: human immunodeficiency virus, PCR: polymerase chain reaction

**Table IV:** The use of commercial infant formula in the facility

Question	Never		Seldom		Neutral		Often		Always	
	n	%	n	%	n	%	n	%	n	%
Caregivers are provided with information to reduce the risk of contamination of infant formula	0	0	0	0	4	13	11	34	17	53
There is an adequate storage space within which to keep infant formula	1	3	5	16	2	6	6	19	18	56
Infant formula is issued to HIV-positive women who have opted to formula feed	1	3	0	0	3	9	7	22	21	66
A demonstration on formula preparation is carried out to mothers who are formula feeding	1	3	3	9	4	13	5	16	19	59
The clinic keeps sufficient stock of free infant formula	0	0	9	28	4	13	9	28	10	31

HIV: human immunodeficiency virus

### Health workers' perceptions of the importance and frequency of infant feeding education and counselling topics given to women

Internal consistency of data in this section was acceptable ( $> 0.7$ ) when verified using Cronbach's alpha. Scores in relation to most of the statements were high, resulting in a mean of 9.8 (SD = 0.44). This implies that the majority of respondents agreed with statements about the topic. However, it is noteworthy that 28% (n = 9) of health workers gave medium to low scores on the question about "the importance of educating pregnant women to continue breastfeeding for two years and beyond". The majority of this group (n = 5) had already received IMCI training.

When perceptions about the frequency of infant feeding education and counselling were assessed, high scores were allocated by 88% (n = 28) of respondents. These high scores were supported by a high median of 8.42 (SD = 1.41). However, it is important to note that staff referred to both their one-to-one counselling sessions, as well as group talks, when deciding on a response in this section.

Qualitative data obtained by the researcher, together with the clinic visits, indicated that the majority of peer counsellors employed by the Department of Health had no record books in which they

documented the number of clients counselled on infant feeding. Lay counsellors of the nongovernmental organisations (NGOs) had log books within which to document the contact with their clients and record the type of information provided. However, data showed that statistics of the infant feeding sessions in some clinics were no longer being completed and even when this occurred, were not included in the final monthly statistics that were submitted to clinic supervisors and management.

### Infant feeding follow-up and support given to human immunodeficiency virus-positive women

Most respondents agreed that follow-up and support were provided for their clients as reflected by the mean score of 7.88 (SD = 1.06). However, as reflected in Table III, 31% of respondents did not agree that women stopped breastfeeding early when AFASS was met, and 34% agreed that a change in socio-economic status was not one of the reasons why HIV-infected women stopped breastfeeding.

### The supply and issuing of free infant formula to babies who are on the prevention of mother-to-child transmission programme

When assessing the supply and issuing of free infant formula, 63% (n = 20) of respondents gave high scores. However, 38%

**Table V:** Interventions in place to build capacity for the Infant and Young Child Feeding policy implementation

Question	Yes		No	
	n	%	n	%
Have you seen a copy of the IYCF policy in your facility?	14	44	18	56
Have you been orientated on the national IYCF policy of South Africa since you started in this facility?	6	19	26	81
Have you received at least 20 hours of training on IYCF or breastfeeding? (if "no", move to next section)?	18	56	14	44
Did your training cover infant feeding in the HIV context?	18	56	14	44
Did your training take place in the past four years?	17	53	15	4

IYCF: Infant and Young Child Feeding, HIV: human immunodeficiency virus

**Table VI:** Responses on the interventions in place to monitor implementation of the Infant and Young Child Feeding policy

Intervention	Never		Rarely		Neutral		Often		Always	
	n	%	n	%	n	%	n	%	n	%
Monitoring of IYCF policy implementation is carried out in this facility	22	69	3	9	4	13	1	3	2	6
This facility conducts needs assessment for the implementation of the IYCF policy	24	75	3	9	1	3	3	9	1	3
This facility has an appropriate action plan with which to ensure successful implementation of the IYCF child feeding policy	25	78	1	3	1	3	4	13	1	3
Use of infant formula is monitored to prevent spillover to the general population	1	3	1	3	2	6	9	28	19	59
The National Department of Health and the Eastern Cape Department of Health monitor and evaluate the implementation of the IYCF policy	25	78	2	6	3	9	2	6	0	0

IYCF: Infant and Young Child Feeding

(n = 12) provided medium scores which resulted in a mean of 7.89 (SD = 1.54). On "whether or not women who formula feed receive demonstrations on how to prepare infant formula", 25% (n = 8) of respondents were either unsure or neutral about whether or not this was carried out, or felt it was seldom or never performed. At the time of the study, the majority of respondents agreed that commercial infant formula was "always" or "often" provided free of charge if HIV-infected women opted to formula feed.

#### Interventions in place to build capacity and monitor training on the Infant and Young Child Feeding policy

Only 28% (n = 9) and 9% (n = 3) attained high scores when interventions to build capacity and monitor implementation of the IYCF policy respectively, were evaluated. It is concerning that 56% (n = 18) of participants reported that they had never seen the IYCF policy before and 43.8% (n = 14) had not yet been trained on IYCF (Table V). Internal consistency of data in this section was acceptable (> 0.7) when verified using Cronbach's alpha.

As reflected in Table VI, 69% of respondents thought that monitoring of IYCF policy implementation was "never" carried out at their facility. Seventy-eight per cent believed that no appropriate action plan was in place to ensure successful implementation of the IYCF policy guidelines. Further investigation showed that the policy was available in 63% (n = 12) of the 19 facilities, but 37% (n = 7) of them could not show the researcher a copy of the policy, or recollect where it was stored or how to access it. The peer counsellors who were responsible for education of the patients worked until 12h00. Some reportedly conducted home visits in the afternoons. The most common statistics that were reported to be collected included tuberculosis case load and directly observed treatment, the number of people testing for HIV, the number of clients who tested positive,

and the number of babies who had been given the PCR test. Little attention was given to the collection of infant feeding data.

#### Discussion

This study aimed to assess the implementation of the South African IYCF policy guidelines in the NMBD healthcare facilities and identify challenges to the training and support of healthcare workers that need to be addressed.

#### Knowledge of infant feeding in the context of the human immunodeficiency virus

Most of the sample achieved high scores in the knowledge section, despite the fact that only half of them had completed the IMCI training and/or the 20-hour IYCF training prior to the research. It is concerning that more than a third of respondents who had already completed the IMCI training scored less than 70%. A few nurses who had completed the specific IYCF course scored less than 70%. Misconceptions about statements such as: "The majority of deaths in children under five years are due to malnutrition resulting from a lack of optimal breastfeeding" and "HIV-exposed babies who are formula fed have a higher mortality than babies who are breastfed" still exist, even in the group who completed the 20-hour IYCF training. Current content of both the IMCI and IYCF courses, and the availability of language resources, need to be evaluated in order to address these misconceptions. The high turnover of nursing professionals among the different disciplines or areas of care, as reflected by the relatively short period of employment in maternal and child health, indicates that professional nurses and health workers should receive specific IYCF training. Ideally, this should be refreshed when they move into this work area. The current content of the IMCI training should be assessed in order to determine whether relevant information on IYCF

in the context of HIV sufficiently addresses potential health worker confusion, as previously highlighted,<sup>4</sup> especially since it may take some time before the maternal and child health nurses are exposed to the specific IYCF training course.

Kavanagh et al<sup>21</sup> indicated that women found professional advice more credible if staff members were confident, showed empathy and were respectful and calm during counselling sessions. Uncertainty on issues identified by the researchers, i.e. the safety or breastfeeding versus formula feeding, may negatively affect the ability of health workers to promote appropriate, safe and optimal IYCF practices to women who attend the PMTCT programme, as previously highlighted.<sup>4,22</sup>

In future studies, it will be important to assess the quality and feasibility of one-to-one education and counselling in primary healthcare facilities.

### Infant feeding follow-up and support

The high scores reflected in this study in relation to the perceptions of health workers on the follow-up and support given to mothers, as well as the frequency thereof, indicate that the respondents acknowledged the value of recurrent counselling in this target group. However, approximately a third of respondents were in a dilemma about the impact of potential barriers, such as socio-economic status and AFASS, which might be detrimental to the support of breastfeeding. Delva et al<sup>23</sup> indicated that PMTCT clients in Kenya reported that the frequency and duration of counselling sessions was inadequate. The post-test counselling session with HIV-negative women took a mean of approximately 7.6 minutes. Information was rarely repeated, despite the depth of detail that women need to receive. This is supported by data from two previous studies in the Eastern Cape which reported inadequate counselling space, resulting in lack of privacy and confidentiality, no support systems in terms of routine follow-up, and an absence of support and the cooperation of staff members with regard to the promotion of exclusive breastfeeding.<sup>24,25</sup> It is of utmost importance that nurses understand the significance of optimal IYCF counselling, which includes follow-up sessions and appropriate records on IYCF counselling by lay counsellors in the health facilities.

As also highlighted by Pelzer et al,<sup>26</sup> inadequate reporting mechanisms by lay counsellors and incomplete information are of great concern and make it difficult to assess the impact that these counsellors have on improving IYCF practices. Standardised guidelines and checklists should be generated to heighten awareness among health workers and to ensure that the quality of education counselling and support remains consistent. Currently, most research studies focus on ARV uptake. However, the frequency, quality of information and duration of counselling sessions, as well as assessment and viability of active community participation, need to be thoroughly investigated in the Eastern Cape in order to assess the impact of PMTCT programmes.

### The supply and issuing of free commercial infant formula to babies on the prevention of mother-to-child transmission programme

According to the 2011 Tshwane Declaration,<sup>14</sup> formula feeds will no longer be provided at public health facilities in South Africa, except when prescribed by appropriate healthcare professionals for infants and children with approved medical conditions. At the time of data collection, it was observed in the Eastern Cape that most of the sample agreed that infant formula was “always” or “often” issued to HIV-infected women who had opted to formula feed. Given that more than 10% of the sample in this study did not agree that caregivers were “often” provided with information on how to reduce the risk of contamination pertaining to infant formula, further training to incorporate the recent recommendations of the Tshwane Declaration at all levels is a matter of urgency. The fact that more than half of this sample agreed that socio-economic circumstances guide HIV-infected mothers' decisions to stop breast feeding, raises concern that there is a need to increase awareness of the content and implications of the Tshwane Declaration in all of the provinces.

### Availability of policies and capacity for policy implementation

Despite the high scores achieved in education and counselling of IYCF in the sample, and the fact that more than 50% of respondents received IMCI and specific IYCF training prior to this study, only half of the respondents had ever seen a copy of the IYCF policy and more than 40% reported that they still needed to be trained in infant feeding in the context of HIV. This raises concerns about the capacity of staff to implement IYCF policy guidelines. There did not seem to be any interventions in place to routinely monitor policy implementation. This may result in staff using different policies with conflicting recommendations, as also found by Peltzer et al.<sup>27</sup> This can cause confusion.<sup>4</sup>

It is highly recommended that a follow-up study is conducted which features in-depth interviews with staff, counsellors and clients to provide qualitative data in order to enhance the credibility of the information provided by the results yielded from the present study.

As has been proposed by Delva et al,<sup>23</sup> interventions need to be preceded and guided by an ongoing audit. There is a need for continuous monitoring of the IYCF policy. The authors recommend that quarterly surveys on IYCF should be conducted by a team of independent data collectors who are allocated by the PMTCT, as well as the Integrated Nutrition Programme (INP) and supporting NGOs. The benefits and impact of the infant feeding guidelines, as well as the type of counselling given by peer educators or lay counsellors, should be assessed. As recommended by Chopra and Rollins,<sup>16</sup> a road show to orientate staff and community volunteers on IYCF policy would be valuable in improving awareness and perceptions about the recent changes in recommendations.

PMTCT outcomes, and in particular, the transmission of HIV postnatally, have improved substantially in South Africa after the new South African PMTCT clinical guidelines were implemented in 2010.<sup>27</sup> However, obstacles such as the fear of transmission of HIV through breast milk, are still major challenges that need to be

addressed in order to improve child health. A study conducted in KwaZulu-Natal revealed that significantly more HIV-infected (than uninfected) mothers chose replacement feeding as the feeding method, despite not having access to running water and flush toilets in their houses.<sup>28</sup> In Ethiopia, it was found that fear of HIV transmission through breastfeeding had pressured HIV-infected mothers into choosing replacement feeding, whether they had met the AFSS criteria or not.<sup>29</sup> This is consistent with findings from other studies.<sup>15</sup> Optimal IYCF training will have to play an important continuous role in improving the nutritional status, growth, development and health of infants and young children, especially in the context of HIV.

The authors recognise the following limitations of this study. The study took place soon after the new guidelines were adopted and just after the country had announced its decision to stop the provision of free infant formula. Infant feeding education in the clinics is also undertaken by lay counsellors who work under various employers, including different NGOs and the Department of Health, Eastern Cape. Their data and statistics were not accessible if they were not present at the clinic at the time of the interview.

In conclusion, if healthcare workers are unsure or subjected to conflicting views about optimal IYCF guidelines and if policy guidelines are unavailable, as has been demonstrated in this NMBD study, the quality of counselling and its impact may be negatively affected. It is imperative that relevant IYCF training in the context of HIV is included in the IMCI training of health workers, with an emphasis on all the changes that have taken place. This will address confusion among health workers. The availability of the IYCF guidelines and monitoring of counselling and training of healthcare professionals and volunteers are some of the challenges that need to be addressed in order to improve the implementation of the IYCF policy in the NMBD healthcare facilities.

## Acknowledgements

Acknowledgement is given to the Department of Health, Eastern Cape Province; Port Elizabeth Hospital Complex; NMB health district; nurses, the peer educators and counsellors who participated; Mr D Venter, Mathematical Statistics, NMB health district; and Ingrid-Oxley Oxland, Dietitian.

## References

- Atashili J, Kalilani L, Seksaria V, Sickbert-Bennet EE. Potential impact of infant feeding recommendations on mortality and HIV-infection in children born to HIV-infected mothers in Africa: a simulation. *BMC Infect Dis*. 2008;8:66.
- Coutsoudis A, Goga AE, Rollins N, Coovadia HM. Free formula for infants of HIV infected women, a blessing or a curse? *Health Policy and Planning*. 2002;17(2):154-160.
- Chopra M, Piwoz E, Sengwana J, et al. Effect of a mother to child HIV prevention programme on infant feeding and caring practices in South Africa. *S Afr Med J*. 2002;92(4):298-302.
- Goga AE. Infant feeding and HIV. Towards a new policy and implementation plan for minimising postnatal HIV transmission and maximising HIV-free survival. *South Afr J HIV Med*. 2009;10(4):20-30.
- Infant and Young Child Feeding Policy 2007. Department of Health [homepage on the Internet]. c2012. Available from: <http://www.doh.gov.za/docs/policy/2008/infantfeed.pdf>
- Epidemiology and Surveillance Directorate, National Antenatal Sentinel HIV and syphilis prevalence of South Africa 2009. Health Systems Trust [homepage on the Internet]. c2012. Available from: <http://www.health-e.org.za/documents/85d3dad6136e8ca9d02cceb7f4a36145.pdf>
- HIV and infant feeding 2010: an updated framework for priority action. World Health Organization [homepage on the Internet]. 2012. Available from: [http://www.who.int/maternal\\_child\\_adolescent/documents/9241590777/en/index.html](http://www.who.int/maternal_child_adolescent/documents/9241590777/en/index.html)
- Global strategy for infant and young child feeding. World Health Organization [homepage on the Internet]. 2003. Available from: <http://whqlibdoc.who.int/publications/2003/9241562218.pdf>
- Doherty TM, Chopra M. HIV and infant feeding. *South African Health Review*. Health Systems Trust. 2006:221-234 [homepage on the Internet]. c2012. Available from: [http://www.sabinet.co.za/abstracts/healthr/healthr\\_2006\\_a16.html](http://www.sabinet.co.za/abstracts/healthr/healthr_2006_a16.html)
- Moland KM, de Paoli MM, Sellen DW, et al. Breastfeeding and HIV, experience from a decade of preventions of postnatal HIV transmission in Sub Saharan Africa. *Int Breastfeed J*. 2010;5:10.
- WHO global data bank on infant and young child feeding. Geneva: World Health Organization; 2010.
- Department of Health, South Africa. Clinical guidelines: PMTCT (prevention of mother-to-child transmission). Pretoria: Department of Health, 2010.
- Tshwane declaration of support for breastfeeding; 2011. Department of Health [homepage on the Internet]. c2012. Available from: <http://www.doh.gov.za/show.php?id=3045>
- Maman S, Cathcart R, Burkhardt G, et al. The infant feeding choices and experiences of women living with HIV in Kinshasa, Democratic Republic of Congo. *AIDS care: psychological and socio-medical aspects of AIDS/HIV*. 2012;24(2):259-265.
- Chopra M, Rollins N. Infant feeding in the time of HIV, rapid assessment of infant feeding policy and programmes in four African countries scaling up prevention of mother to child transmission programmes. *Arch Dis Child*. 2008;93(4):288-291.
- Fadnes LT, Engebretsen IMS, Wamani H, et al. Need to optimise infant feeding counselling: a cross-sectional survey among HIV-positive mothers in Eastern Uganda. *BMC Pediatr*. 2009;9:2.
- Shah S, Rollins NC, Bland R. Breastfeeding knowledge among health workers in rural South Africa. *J Trop Paediatr*. 2005;51(1):33-8.
- South African Demographic and Health Survey [homepage on the Internet]. 2003. Available from: <http://www.info.gov.za/view/DownloadFileAction?id=90143>
- Department of Health, South Africa 2007. Infant and young child feeding policy. Pretoria: Department of Health, South Africa; 2007.
- Indicators for assessing infant and young child feeding practices, Part 1: definitions. Geneva: WHO; 2008.
- Kavanagh KF, Cohen RJ, Heinig MJ, Dewey KG. Educational intervention to modify bottle-feeding behaviors among formula-feeding mothers in the WIC program: impact on infant formula intake and weight gain. *J Nutr Educ Behav*. 2008;40(4):244-250.
- Doherty T, Chopra M. HIV and infant feeding. *South African Health Review*. Health Systems Trust [homepage on the Internet]. 2006. Available from: [www.hst.org.za/uploads/files/chap13\\_06.pdf](http://www.hst.org.za/uploads/files/chap13_06.pdf)
- Delva W, Mutunga L, Quaghebeur A, Tammerman M. Quality and quantity of antenatal HIV counselling in a PMTCT programme in Mombasa, Kenya. *AIDS Care*. 2006;18(3):189-193.
- Doherty TM, Chopra M, Jackson D, et al. Effectiveness of the WHO/UNICEF guidelines on infant feeding for HIV positive women, results from a prospective cohort Study in South Africa. *AIDS*. 2007;21(13):1791-1797.
- Moobi EK. The experiences and perceptions of midwives at Provincial Hospital in Nelson Mandela Metropolitan regarding exclusive breastfeeding by HIV positive first time mothers. [Master's Thesis]. Port Elizabeth: Nelson Mandela Metropolitan University; 2006.
- Peltzer K, Phaswana-Mafuya N, Ladzani R. Implementation of the National programme for prevention of mother to child transmission of HIV, a rapid assessment in Cacadu district, South Africa. *African Journal of AIDS [homepage on the Internet]*. 2010. Available from: <http://www.ajol.info/index.php/ajar/article/view/53863>
- Grimwood, A, Fatti G, Mothibi E, et al. Progress of preventing mother-to-child transmission of HIV at primary healthcare facilities and district hospitals in three South African provinces. *S Afr Med J*. 2012;102(2):81-83.
- Swarts S, Kruger HS, Dolman RC. Factors affecting mothers choice of breastfeeding vs. formula feeding in the lower Umfolozi district war memorial Hospital, KwaZulu-Natal. *Health SA Gesondheid*. 2010;15(1):1-6.
- Woldegiyorgis BA, Scherrer JL. Replacement feeding experiences of HIV-positive mothers in Ethiopia. *Journal of Community Practice*. 2012;20(1-2):69-88.