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RESEARCH

Infant and Young Child Feeding Policy: do primary health care nurses adhere to the HIV breastfeeding recommendations in Limpopo province?

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Background: The HIV and Infant and Young Child Feeding (IYCF) guidelines in the revised IYCF policy of 2013 encouraged HIV-positive mothers to breastfeed exclusively for six months. In the case of HIV, the 2013 recommendation was that breastfeeding should continue for a year with the introduction of appropriate complementary feeding at six months while children receive antiretroviral treatment. The aim of this study was to determine the knowledge and practices of primary health care (PHC) nurses related to the implementation of the revised IYCF policy, with a specific focus on HIV breastfeeding recommendations, in Blouberg Municipality, Limpopo province.
Methods: A quantitative, descriptive study design was conducted and included 103 conveniently selected PHC nurses. Data were collected using a questionnaire with closed ended questions. Data were analysed using SPSS® software v23.0, and using both descriptive and inferential statistical analysis.
Results: Some 97.1% ($n = 100$) of the participants displayed good knowledge of IYCF recommendations in the context of HIV. In all, 68% ($n = 70$) of participants were not trained on the HIV and IYCF guidelines in the revised IYCF policy of 2013, resulting in only 32% ($n = 33$) of participants correctly implementing these guidelines. Also, 44.7% ($n = 46$) of the participants reported that they were not aware whether clinics had a copy of this policy. The results further revealed that 92.2% ($n = 95$) of the participants reported that clinics still received, kept and issued infant formula to HIV-positive mothers, which may be the reason why dietitians still received requests for infant formulas to be delivered to HIV-positive mothers.
Conclusion: PHC nurses need to be trained, monitored and evaluated when updated HIV and IYCF guidelines are issued in order to ensure their correct implementation.

Keywords: Infant and Young Child Feeding Policy, knowledge, practice, primary health care

Introduction and background

Optimal infant and young child feeding practices are essential to children's health, growth, development and nutritional status, and protect against illnesses and mortality.[1] They also assist in the prevention of childhood obesity and related health problems.[2]

Promotion and/or practising of exclusive breastfeeding (EBF) reduces mortality amongst infants due to breast milk's beneficial immunological and anti-infective factors, which also promote healthful gastrointestinal microbiota.[3] According to the Lancet's Series on Child Survival, increasing breastfeeding to optimal levels could reduce by 13% all child deaths in low-income countries.[4]

Infants who are not exclusively breastfed have a more than twofold risk of dying at the age of 0–5 months, due to diarrhoea and pneumonia.[5] Exclusive breast milk protects infants against short-term illnesses such as gastroenteritis, respiratory infection and under-nutrition, while the long-term benefits include protection against chronic diseases and obesity in later life, amongst others.[6]

There are numerous benefits of breastfeeding and exclusive breastfeeding in particular, to the country, community, family, mother and child. There are, however, many factors that influence exclusive breastfeeding practices. These include maternal characteristics such as lack of information, occupation, health condition and age.[7] Certain cultural beliefs and practices related to initiation of breastfeeding and time of introduction of complementary feeding can also influence the practice of exclusive breastfeeding negatively, because some caregivers introduce complementary foods much earlier than the recommended six months of age.[6]

In 2002, South Africa implemented infant and young child feeding (IYCF) guidelines, which discouraged HIV-positive mothers from breastfeeding for fear of the mother to child transmission (MTCT) of HIV.[8] The IYCF policy of 2007 promoted exclusive breastfeeding for six months, with abrupt weaning, in addition to receiving ARVs, but recommended formula feeding if AFASS (acceptable, feasible, affordable, sustainable and safe) criteria could be met. Free formula was issued to HIV-positive mothers who opted not to breastfeed.

With new evidence on HIV and IYCF emerging, the National Department of Health[9] issued the Tshwane Declaration on Support for Breastfeeding in South Africa (SA) in 2011. Among other things, the declaration stated that the issuing of free formula at public health facilities according to the IYCF policy of 2007 would be phased out. The declaration also called for the International Code of Marketing of Breast-milk Substitutes to be legislated. This led to the promulgation of regulations relating to foodstuffs for infants and young children (Regulation 991),[10] which includes the legislation of the Code in South Africa and prohibits marketing of breast milk substitutes in health facilities.

The Tshwane declaration prompted the revision of the IYCF policy in 2013. The revised IYCF policy was based on the World Health Organization's (WHO)[11] guidelines, which emphasise that HIV-positive mothers should breastfeed exclusively for the first six months of their baby's life. Mothers were encouraged to

continue breastfeeding until 12 months of life with the introduction of appropriate complementary foods at 6 months regardless of the baby's HIV status, while babies were receiving antiretrovirals (ARVs) to reduce HIV transmission through breastfeeding. The revised IYCF policy of 2013 recommended the issuing of infant formula only when authorised by a qualified health professional, due to medical reasons prohibiting breastfeeding.[12]

Any policy, once developed or updated, should be translated into practice and policy implementers should be trained on the contents of the policy, which will help in delivering expected outcomes.[13] According to Sunguya *et al*.,[14] healthcare workers (HCWs) working in antenatal/postnatal care require in-depth breastfeeding knowledge and skills in lactation management because mothers often identify HCWs' support as the most important intervention for successful breastfeeding. Primary health care workers, mainly nurses, doctors and dietitians, are meant to be the main implementers of policies related to infant and young child feeding in SA.[15] However, if the policy is not properly communicated to implementers, they will not be aware of the latest recommendations pertaining to IYCF, including in the context of HIV. According to Tomlinson *et al*.,[16] South Africa has the highest number of people living with HIV/AIDS, of which 30% are pregnant women and they require appropriate care with their children. The exclusive breastfeeding rate in South Africa is very low at around 8% according to SANHANES (2012) and 32% according to SADHS (2016); these figures signal a dire need for intensive promotion, support and protection of breastfeeding.[17] The government prioritised strengthening of HIV prevention and AIDS-related disease management and control; it adopted a multi-sectoral strategic approach in dealing with the spread of HIV and mitigating the impact of AIDS-related morbidity and mortality. This approach ensures that all relevant stakeholders play an active role in combating HIV and AIDS in their areas of comparative advantage.[18]

Despite the documented benefits of breastfeeding and exclusive breastfeeding and notwithstanding the government efforts to promote exclusive breastfeeding among both HIV-positive and HIV-negative mothers, a concern was raised in Blouberg municipality, Limpopo province regarding adherence to the updated 2013 IYCF policy. Dietitians reported that they were still receiving requests for infant formula, especially from PHC nurses, who are supposed to be the drivers and implementers of the new updated policy.

The aim of this study therefore was to investigate the knowledge and practices of PHC nurses regarding the HIV and IYCF guidelines in the revised IYCF policy of 2013.

Methods

We used a quantitative approach and descriptive cross-sectional study design in this study.

Study participants

A total of 103 nurses from all categories including operational managers, professional, enrolled, auxiliary and assistant auxiliary were sampled from a population of 143 PHC nurses from 21 clinics in Blouberg Municipality, using Morgan and Krejcie's[19] table for sample size estimation: *@ 1.96 for 95% confidence level, where Population proportion is assumed to be 0.5 (50%) and Degree of accuracy (5%) is expressed as a proportion (0.05)*. These nurses were recruited verbally from their units, and those who agreed were sampled conveniently to reach the desired sample size according to nursing categories. In each category, all nurses who agreed to participate were included, since the total population size was too small to conduct random sampling.

Data collection

Data were collected in 2015, using a close-ended questionnaire based on the contents of the HIV and IYCF guidelines in the revised IYCF policy of 2013. The questionnaires comprised three parts: demographic information; knowledge of HIV and IYCF; and practices related to the implementation of the HIV and IYCF guidelines in the revised IYCF policy. Seven questions were used to establish knowledge, using a three-point Likert scale: agree; neutral; disagree. Also, for practices, 11 questions were used to establish practice, using a three-point Likert scale: yes; no; not sure. Reliability of the instrument was ensured through pilot testing done at Blouberg Health Centre, and the results of the pilot study were not included in the overall study. Content validity was ensured by requesting input from five peers in the Public Health Department of the University of Limpopo. The study supervisor and two dietitians at a public hospital also provided feedback on the instrument. All nurses who gave informed consent were provided with questionnaires for self-completion. On average nurses spent 15 min completing the questionnaire. The researcher and research assistant were present during completion of questionnaires.

Data analysis

Data were coded and entered into the Statistical Package for Social Sciences (SPSS®) version 23.0 (IBM Corp, Armonk, NY, USA) for analysis. Scores for knowledge and practices were added and percentages were generated. For the purpose of this study, knowledge was scored on an overall scale of 100% and classified into two categories: poor and good. Poor knowledge refers to achievement of a total score of < 70% and good knowledge refers to achievement of a total score ≥ 70%. Practices were classified into three categories: good, fair and poor practice; those who scored < 50% were rated as having poor practice; 50–69% fair practice and those who scored ≥ 70% were rated as having good practice. For descriptive analysis, frequency distributions, central tendencies, means and standard deviations were calculated. To determine whether associations existed between socio-demographic factors, knowledge and practice relation to implementation of revised IYCF policy recommendations in the context of HIV, a chi-square test was used. A *p*-value of < 0.05 was considered statistically significant.

Ethical considerations

Turfloop Research Ethical Committee (TREC) approved the study and allocated a clearance certificate number (TREC/48/2015:PG). The Limpopo Department of Health (DOH) gave permission to conduct the study at the site (Ref: 4/2/2). The sisters in charge of clinics also gave permission to conduct the study. All participants provided written informed consent for the study. Participation was voluntary and participants were informed about the right to withdraw from the study at any stage without penalty. Privacy and confidentiality of the collected data were also maintained.

Results

Table 1 shows that the majority of participants were females (91.7%; *n* = 94) compared with males who participated. Close to half of the participants were ≤ 40 years (42.7%; *n* = 44) and worked for ≤ 10 years (56.3%; *n* = 58).

Table 2 shows that 4.8% (*n* = 5) of the participants responded that HIV-positive mothers should not breastfeed, but instead

Table 1: Demographic profile of participants (n = 103)

Variables		Total(n = 103)	%
Gender	Males	9	8.7
	Females	94	91.3
Age	20–30 yrs	13	12.6
	31–40 yrs	46	44.7
	41–50 yrs	35	34.0
	> 50 yrs	9	8.7
Categories of nursing	Operational manager	6	5.8
	Professional nurse	46	44.7
	Staff/enrolled nurse	27	26.2
	Auxiliary/assistant staff nurse	24	23.3
Length of service	≤ 10yrs	58	56.3
	>10yrs	45	43.7

(n = 29) reported that clients had not been educated (see Table 3).

Table 4 shows that there was no significant association between levels of practices and knowledge (p = 0.397); however, 34% of respondents with good knowledge had poor practices; only 32% of those with good knowledge had good practices as well. None of those with poor knowledge displayed good practices (see Table 4).

Discussion

According to Sinhababu *et al.*,[1] survival of infants and young children is dependent on the best infant and young child feeding practices, which are essential to the children's health, growth, development and nutritional status. Infants who are not breastfed are 6–10 times more likely to die in the first months of life than breastfed infants.[20] PHC nurses are viewed as the main source of infant feeding information for mothers.[15] Therefore, PHC nurses counselling HIV-infected mothers about IYCF can play a major role in the outcome of the choice of feeding. Our

Table 2: Knowledge of HIV and IYCF guidelines in the revised IYCF policy of 2013 (n = 103)

IYCF and HIV recommendations	Agree *n* (%)	Neutral *n* (%)	Disagree *n* (%)
HIV-positive mothers should not breastfeed their children, but instead formula feed	5 (4.8)	4 (3.9)	94 (91.3)
HIV-positive mothers should breastfeed while children are receiving nevirapine prophylaxis or ARVs	101 (98.1)	0	2 (1.9)
Exclusive breastfeeding for HIV exposed children is recommended for six months	99 (96.1)	0	4 (3.9)
During exclusive breastfeeding, an infant should not be given even water	96 (93.2)	0	7 (6.8)
Formula feeding should not be recommended as an alternative to breastfeeding, unless there are legitimate medical reasons to do so	92 (89.3)	6 (5.8)	5 (4.9)
Breastfeeding is the best feeding option for both HIV unexposed and exposed children	100 (97.1)	0	3 (2.9)
Complementary feeding should be introduced at six months, while continuing breastfeeding for a year	93 (90.3)	7 (6.8)	3 (2.9)

formula feed, and 98.1% (n = 101) agreed that children should receive ARV treatment while being breastfed. In total, 96.1% (n = 99) agreed that HIV exposed children should be exclusively breastfeed for six months, and 93.1% (96) agreed that no water should be given during EBF. Additionally, 89.3% (n = 92) agreed that formula feeding should only be recommended due to medical reasons. Furthermore, 97.1% (n = 100) agreed that breastfeeding is best for both HIV exposed and unexposed children, and 90.3% (n = 93) agreed that complementary feeding should begin at six months.

Figure 1 shows the average knowledge and practice of participants regarding HIV and IYCF guidelines in the revised IYCF policy of 2013: 97.1% (n = 100) of the participants displayed good knowledge and 2.9% (n = 3) had poor knowledge. Also, 34% (n = 35) of respondents scored low on practice, followed by 35% (n = 36) who scored fair on practice and only 31% (n = 32) scored good on practice.

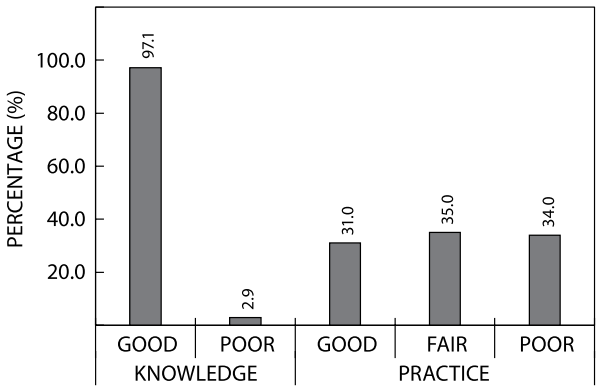

Figure 1: Knowledge and practice of participants regarding the 2013 IYCF guidelines.
Note: The first two bars are for overall knowledge and last three bars are for overall practice.

Table 3 shows that only 55.3% (n = 57) reported that the clinic had a copy of the HIV and IYCF guidelines, whilst 20.4% (n = 21) were not sure. Also, 56.3% (n = 58) reported they had seen the guidelines and about one-third had never seen them. Furthermore, only 32% (n = 33) reported that they had been trained on the HIV and IYCF guidelines in the revised IYCF policy 2013, and close to two-thirds (64.1%; n = 66) had not received training on these guidelines. In addition, 62.1% (n = 64) reported that clients had been educated on these guidelines, and 28.2%

results indicate that the majority of the nurses in all categories, irrespective of age and gender, had good knowledge of the HIV and IYCF guidelines in the IYCF policy of 2013, which is essential in order to avoid preventable childhood illnesses and death. Knowledge concerning updated HIV and IYCF guidelines is very important, but knowledge alone is not sufficient. Other factors such as lack and/or poor training of HCWs,[21] including poor counselling skills by HCWs in terms of the mothers,[22] affect

Table 3: Availability of the HIV and IYCF guidelines in the revised IYCF policy of 2013 and staff training on these guidelines (n = 103)

Availability of the HIV and IYCF guidelines in the revised IYCF policy 2013	Yes (%)	No (%)	Not sure (%)
The clinic has a copy of the HIV and IYCF guidelines	57 (55.3)	25 (24.3)	21 (20.4)
I have seen a copy of the HIV and IYCF guidelines	58 (56.3)	35 (34.0)	10 (9.7)
I have been trained about the HIV and IYCF guidelines in the revised IYCF policy of 2013	33 (32.0)	66 (64.1)	4 (3.9)
My clinic educates clients about the contents of the HIV and IYCF guidelines	64 (62.1)	29 (28.2)	10 (9.7)
Care and support of clients with regard to the implementation of the HIV and IYCF guidelines in the revised IYCF policy of 2013			
My clinic collaborates with other organisations, departments, NGOs and community organisations in educating clients about the HIV and IYCF guidelines in the revised IYCF policy of 2013	63 (61.2)	29 (28.1)	11 (10.7)
My clinic has breastfeeding support group	17 (16.5)	81 (78.6)	5 (4.9)
My clinic receives, keeps and issues infant formula to HIV-positive mothers	*95 (92.2)*	5 (4.9)	3 (2.9)
When the infant's mother is critically ill or dies, my clinic encourages guardians to formula feed	85 (82.6)	13 (12.5)	5 (4.9)
My clinic has a workplace breastfeeding policy that meets the breastfeeding needs of the employees	61 (59.2)	28 (27.2)	14 (13.6)

Table 4: Practice versus knowledge of the nurses

Knowledge		Levels of practice			*p*-value
		Poor practice (n = 35), n(%)	Fair practice (n = 36), n(%)	Good practice (n = 32), n(%)	
Knowledge (n = 103)	Poor knowledge (n = 3)	1 (33.3)	2 (66.7)	0	p = 0.397
	Good knowledge (n = 100)	34 (34)	34 (34)	32 (32)	

Note: Chi-square = 1.850.

implementation of these guidelines. Shortage of staff, insufficient supportive supervision of nutrition programmes and attrition and redeployment of staff after training may negatively impact clinics' capacity to implement HIV and IYCF guidelines.[23]

Mkontwana *et al*.[24] stated that availability of policies at health facilities constitutes a capacity-building intervention for the implementation of IYCF policy. After the adoption of the revised IYCF policy of 2013 containing HIV and IYCF guidelines, the Department of Health (DOH) disseminated and circulated these guidelines to the health facilities or institutions.[12] Despite nurses having good knowledge about HIV and IYCF, it is a concern that close to half of nurses reported that the clinics did not have a copy of the HIV and IYCF guidelines on the revised IYCF policy of 2013. Therefore, this weakens the capacity of nurses to implement HIV and IYCF guidelines on the revised IYCF policy of 2013. It also denies nurses an opportunity to refer to a guiding document in the event of misunderstanding and/or conflicting views among them.

Training in the policy/guidelines may improve skills and abilities of the implementers and may lead to successful policy implementation.[13] Women consider professional education more credible from staff who empathise with them and are respectful, and also demonstrate confidence during counselling sessions.[25] Also, many women in sub-Saharan Africa accept the HIV and IYCF recommendations from HCWs as final, and the opinions and advice given by them are highly respected.[26] In spite of nurses in our study having good knowledge of HIV and IYCF guidelines, it is of concern that most nurses have not been trained on these guidelines. Therefore, these nurses may not have the capacity and skills to persuade HIV-positive mothers to choose appropriate feeding methods for their infants. Nurses may be confused about the changes made to IYCF recommendations in the context of HIV over the past years in SA. They may also not be convinced of the latest evidence if they have not received training on the updated policy.

The HIV and IYCF guidelines in the revised IYCF policy 2013 provide that healthcare facilities can acquire, store and issue infant formulas to hospitalised mothers who, for medical reasons, cannot breastfeed.[12] It is therefore of concern that an overwhelming majority of nurses reported that clinics still stored and issued infant formula to HIV-positive mothers, this despite the clear stipulation in the new policy that they should not do so. This implies that nurses misinterpreted or ignored this provision in the revised IYCF policy, which stipulates that no infant formulas will be available to HIV-positive mothers in healthcare facilities.[9] The availability of infant formulas at the PHC clinics may undermine the intention of updated HIV and IYCF guidelines in the IYCF policy of 2013, as it may indirectly imply that infant formula should continue to be provided as was the case with HIV and IYCF guidelines in the IYCF policy of 2007. This could also be the reason why dietitians still get referrals from the PHC nurses for supply of infant formula, which is to be delivered to HIV-positive mothers. It is insufficient for the DOH only to circulate revised HIV and IYCF guidelines in the revised IYCF policy of 2013; the district and provincial DOH should monitor and evaluate the implementation of services, and be aware of such outdated and inappropriate practices at the public health facilities. The following questions emerge and remain unanswered by this study regarding availability of infant formula in PHC clinics:

(1) Where are the available infant formulas at these clinics coming from?

(2) Are these infant formulas purchased from the health department's budget?

(3) If departmental budget is used, who approves/d it and why?

The cooperation of all stakeholders affected and involved in the implementation of the policy is important for its success. Various stakeholders bring the required resources, skills and abilities to produce desired policy outcomes.[27] It is encouraging that the results of our study showed that close to two-thirds of the nurses reported that clinics collaborated with other organisations in educating clients about HIV and IYCF guidelines in the revised IYCF policy of 2013.

Subsequent to the update of the 2013 IYCF policy and after the research reported here had been conducted and concluded, the WHO released an update on HIV and infant feeding in 2016. The latest WHO guidelines state that all mothers should breastfeed for at least 12 months and can continue to breastfeed for two years and beyond, regardless of their HIV status.[28] The South African government formally adopted this guideline in June 2017,[29] and reiterated that HIV-infected women who are breastfeeding should be counselled and supported to adhere to antiretroviral therapy and should be counselled and supported to exclusively breastfeed their infants for the first six months of life, to introduce complementary foods thereafter and to continue breastfeeding for at least two years. This means that infant and young child feeding recommendations for HIV-negative and HIV-positive mothers are fully aligned.

Notwithstanding the release of the latest ICYF guidelines and adoption thereof by SA, the results of this research remain relevant and will be equally applicable to the amended IYCF policy of 2017.

Limitations of the study

The study population was small, therefore it is difficult to generalise the findings to the population of nurses in Limpopo province and beyond.

Conclusion

This study found that PHC nurses had good knowledge regarding the HIV breastfeeding recommendations in the revised IYCF policy of 2013. However, there was poor adherence to the recommendations. Poor implementation/adherence could be due to a combination of factors, including the lack of training, confusion concerning the guidelines or lack of conviction of nurses in this regard, as well as the availability of infant formula at PHC level. The findings point to the need for adherence, monitoring and evaluation of updated HIV and IYCF guidelines for effective implementation, especially in light of the fact that the HIV IYCF guidelines have been amended. Training should be provided to current and new staff on the SA IYCF guidelines as depicted in the revised IYCF 2017 policy. Monitoring and evaluation should be done via messaging and support provided to all mothers with regard to IYCF. The DOH should investigate and seek answers to the unanswered questions pertaining to the availability of infant formula in PHC clinics in Limpopo province.

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