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RESEARCH PAPER

Breast-feeding and human immunodeficiency virus infection: Assessment of knowledge among clinicians in Kenya

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Breast-feeding and human immunodeficiency virus infection: Assessment of knowledge among clinicians in Kenya

In Kenya, human immunodeficiency virus (HIV) prevalence ranks among the highest in the world. Approximately 60 000 infections yearly are attributed to vertical transmission including the process of labour and breast-feeding. The vast of the population affected is in the developing world. Clinical officers and nurses play an important role in provision of primary health care to antenatal and postnatal mothers. There are a few studies that have explored the clinicians' knowledge on breast-feeding in the face of HIV and in relation to vertical transmission this being a vital component in prevention of maternal-to-child transmission. The aim of this study was to evaluate clinicians' knowledge on HIV in relation to breast-feeding in Kenya. A cross-sectional survey was conducted to assess knowledge of 161 clinical officers and nurses serving in the maternity and children' wards in various hospitals in Kenya. The participants were derived from all district and provincial referral facilities in Kenya. A preformatted questionnaire containing a series of questions on HIV and breast-feeding was administered to clinicians who were then scored and analyzed. All the 161 participants responded.

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Majority of clinicians (92%) were knowledgeable regarding prevention of mother-to-child transmission. Regarding HIV and breast-feeding, 49.7% thought expressed breast milk from HIV-positive mothers should be heated before being given. Majority (78.3%) thought breast milk should be given regardless of availability of alternatives. According to 74.5% of the participants, exclusive breast-feeding increased chances of HIV transmission. Two-thirds (66.5%) would recommend breast-feeding for mothers who do not know their HIV status (66.5%). This study observes that a majority of the clinicians have inadequate knowledge on breast-feeding in the face of HIV. There is need to promote training programmes on breast-feeding and transmission of HIV from mother to child. This can be done as in-service training, continuous medical education and as part of the formal training within medical institutions.

Key words: breast-feeding, HIV, Kenya, transmission.

INTRODUCTION

The prevalence of human immunodeficiency virus (HIV) in Kenya ranks among the highest in the world.[1,2] It is estimated that approximately 60 000 new infections yearly are attributable to vertical transmission that occurs during pregnancy, labour, delivery or breast-feeding.[3–5] Worldwide, about one-third to one-half of vertical transmission of HIV is related to breast-feeding.[4,6] Developing countries are grappling with an estimated 95% of total HIV infection among women and bear the greatest burden of the disease.[4] Armed with interventional measures, developed countries have been able to reduce the rate of vertical transmission. Consequently, focus should be shifted towards mitigating the spread of HIV through vertical transmission in developing countries.

Although trained HIV/AIDS counsellors and nutritionists offer good auxiliary efforts towards achieving high-quality prevention of maternal-to-child transmission (PMTCT) services and decrease the workload on full-time clinicians, the latter still play an unrivalled role in provision of these services.[7,8] There are few studies that have evaluated clinicians' knowledge on breast-feeding in the presence of HIV and in relation to vertical transmission, this being a vital component in PMTCT. This study aimed to assess clinicians' knowledge on breast-feeding in the presence of HIV.

METHODS

A cross-sectional survey was conducted to assess the knowledge of 161 nurses and clinical officers serving in maternity and children's wards. The participants were derived from all district and provincial referral facilities in Kenya in the year 2010 and attending a seminar on essentials of newborn care. Authority to carry out the study was granted by the Ministry of Public Health and Sanitation. Professional nurses are those with 3 years of training at a medical training college, whereas clinical officers have training in clinical medicine, also at a medical training college, and work closely with medical officers who are university graduates.

Closed-ended questions on HIV transmission and preventive measures that were of special relevance to prevention of mother-to-child transmission were used in order to assess the working knowledge of the interviewees. The questionnaires were pretested by a consultant paediatrician working in the newborn unit through participation in a pretest by the health-care providers within the unit at Kenyatta National Hospital, and adjustments were made accordingly. Questions included the aspects of initiation of breast-feeding, risks of not breast-feeding, breast-feeding after 6 months and risks of vertical transmission. Responses were compared with those recommended by WHO/UNAIDS guidelines. The data obtained were entered and analyzed with Statistical Package for the Social Sciences 16.0 (SPSS Inc., Chicago, IL, USA). Frequencies and means were obtained for various parameters, whereas the χ^2-test was used to test the difference in knowledge between the clinical officers and the nurses.

RESULTS

All 161 participants who attended the seminar responded. The mean age was 29.1 years, with 91 females and 70 males. One hundred and six (65.8%) were nurses and 55 (34.2%) clinical officers (Table 1). The majority of the

Table 1 General characteristics of respondents

	Nurses (n = 106)	Clinical officers (n = 55)
Male (%)	36	81
Mean age (years)	33.6	24.3
With training on PMTCT (%)	96	88

PMTCT, prevention of mother-to-child transmission.

Table 2 Respondents' answers to questions on breast-feeding practices

	Correct responses, *n* (%)			*P* value†
	Nurses (*n* = 106)	Clinical officers (*n* = 55)	Total	
For mothers who are HIV-positive:				
Should breast milk be heated before being given to infants?	58 (54.7)	22 (40)	80 (49.7)	0.295
In the presence of alternative feeding programmes, should breast milk be given?	20 (19)	15 (27.3)	35 (21.7)	0.572
Should breast-feeding continue after weaning at 6 months?	94 (88.6)	42 (39.6)	136 (84.5)	0.088
Does exclusive breast-feeding for 6 months increase chances of HIV transmission?	16 (15.1)	25 (45.5)	41 (25.5)	<0.001
Should breast-feeding be encouraged for mothers who don't know their HIV status?	83 (78.3)	24 (43.6)	105 (65.2)	<0.05
Does lack of breast-feeding increase risk of childhood illnesses and death?	78 (73.5)	43 (78.1)	121 (75.2)	0.708
Does mastitis increase chances of HIV transmission?	60 (56.6)	40 (72.7)	100 (62.1)	0.205
Mean	58 (54.7)	30 (54.5)	88 (54.7)	—

Questions based on the WHO/UNAIDS breast-feeding guidelines for HIV-infected mothers. †χ^2-test.

clinicians (92%) were knowledgeable regarding the PMTCT programme and what it entails.

Regarding HIV and breast-feeding, when asked whether breast-feeding is recommended for mothers who do not know their HIV status, 66.5% answered in the affirmative; on the subject of the infant feeding at the breast, 49.7% of the respondents thought expressed breast milk from HIV-positive mothers should be heated before being given, 78.3% thought breast milk from HIV-positive mothers should be given regardless of the availability of alternatives, and 75.2% of the clinicians conceded that the risk of childhood illnesses and death outweighed the risk of HIV transmission from breast milk if breast-feeding was not done. Asked whether breast-feeding should continue after weaning at 6 months, 84.5% affirmed that it should be continued. On the risk of vertical transmission, 74.5% responded that exclusive breast-feeding for 6 months increased the chances of HIV transmission as opposed to giving additional feeding. Moreover, 38% failed to relate the contribution of mastitis to increased risk of HIV transmission (Table 2).

DISCUSSION

This study observes discrepant knowledge levels about breast-feeding practices in those who are supposed to take care of mothers infected with HIV in Kenya. This is despite the fact that breast-feeding is known to be the best method of infant feeding and should be encouraged exclusively for the first 6 months of an infant's life.[9–12]

Less than 50% of respondents would recommend heating of breast milk before feeding the baby of an HIV-infected mother. Despite WHO recommendations that heating provides a simple yet effective treatment method to inactivate cell-free HIV,[13] the clinicians in this study seemed not to be aware of this concept. An earlier study conducted in Kenya showed that most health informants did not believe that heat treatment of milk could destroy HIV; hence, they similarly did not favor this option.[14] The various methods of heat treatment are effective and can easily be performed at home. They retain the nutritional potency and immunoglobulin content of breast milk in addition to being superior to feeding with formula milk.[15,16] Obstacles that are faced in using these methods, including social stigma, time and physical constraints, can easily be addressed through family and community support. The clinicians should be supported to learn these methods accordingly.

Although most of the clinicians had heard of PMTCT, only 74% knew about the risk of postnatal transmission of HIV via breast milk. This is in contrast to earlier

observations among community members and health workers, where a larger percentage (85.5%) of the respondents knew about HIV transmission through breast milk.[14] In general, nurses were the least knowledgeable cadre ($P < 0.001$). Nurses are the health professionals who are in regular contact with mothers and their infants. They live in the local communities and are in a strategic position to encourage exclusive breast-feeding in hospitals and at home.[17,18]

The majority (84.9%) believed that exclusive breast-feeding increased chances of HIV transmission. Indeed, it has been noted that the majority of HIV-positive women in Kenya practise mixed feeding shortly after giving birth, and this has been blamed on lack of proper information.[19,20] Exclusive breast-feeding for 6 months followed by abrupt weaning has been proposed as a protective strategy for HIV-positive mothers in communities where formula is not affordable or safe to use.[21,22] There is therefore need for specific training on breast-feeding and issues related to mother-to-child transmission of HIV. The findings recorded in the current study support literature reports on the lethargic attitude and practices of health professionals towards breast-feeding, which might be due to poor training.[23–25] Internationally, the consensus is that when replacement or alternative feeding is acceptable, feasible, affordable, sustainable and safe (AFASS), avoidance of all breast-feeding by HIV-infected mothers should be encouraged.[26] Otherwise, expressed breast milk, heat treatment and cup-feeding could serve as an affordable and safe source of nutrition and immunological protection during the first 2 years of an infant's life and would help in preventing them from developing malnutrition and its attendant complications.[13] In Africa, a significant proportion of the population cannot access alternative feeding programmes, and many HIV-positive women choose to carry out mixed feeding.[27] It is imperative to equip clinicians with adequate knowledge on alternative feeding and safe breast-feeding practices for HIV-positive women living in resource-limited settings.

In Kenya, although as part of PMTCT programmes mothers are required to undergo HIV testing as part of the antenatal profile, full compliance has not been achieved.[28,29] It is therefore encouraging to note that in the current study many nurses affirm that they would encourage mothers to breast-feed exclusively regardless of their unknown HIV status. Pertinent to this observation are reports that exclusive breast-feeding is the best option for an infant because it protects them from morbidity and mortality, HIV-related or not.[30] Indeed, HIV-exposed infants who were breast-fed exclusively for at least 3 months had a lower risk of HIV infection than mixed-fed infants.[21] The majority of clinical officers (56.4%), on the contrary, would not encourage the mothers to breast-feed ($P < 0.05$). This suggests that further education of clinical officers is required.

A significant proportion of clinicians (43.4% of nurses and 27.3% of clinical officers) in this study could not positively relate the effect of mastitis to increased chances of HIV transmission. This result is comparable with observations made by Lawrence[31] that mastitis is not taken seriously by medical personnel. Mastitis is an inflammatory process in the breast and occurs in about 30% of lactating mothers.[32,33] In mastitis, inflammatory cells and extracellular fluid extravasate and enter the breast milk. Consequently, inflammatory cells such as infected lymphocytes could raise HIV-1 load in breast milk and raise the chances of mother-to-child transmission of HIV.[34] These results imply that there should be more effort geared towards increasing awareness of mastitis and its attendant complications.

To achieve informed decisions when it comes to infant care and feeding in the presence of HIV, various organizations have come up with guidelines to help clinicians. UNICEF, for example, has a programme aimed at improving infant and young child feeding at a community level. This is in recognition of the fact that many clinicians in developing countries lack the prerequisite practical support, one-to-one counseling skills and correct information. The purpose of this programme is to ensure equitable access to health care for all infants at a community level.[35]

A study conducted among counsellors in northern Tanzania on perspectives on HIV/AIDS and breast-feeding found that not only did patients have difficulty in understanding feeding options for HIV-infected mothers, but so did the counsellors. In their conclusion, the authors were of the view that the counsellors needed additional training in nondirective counselling and infant feeding options to better equip them.[36] The WHO has developed a guideline for health supervisors and managers on how to support and promote safe infant feeding practices in the context of HIV.[37] The guidelines are simple to follow and practical. If these guidelines are incorporated in medical school curricula and continuous medical education programmes, they are likely to promote safe infant feeding practices with better outcomes.

CONCLUSION

This study observes that a majority of the clinicians had inadequate knowledge on breast-feeding in the presence of HIV. There is need to promote training programmes on breast-feeding and transmission of HIV from mother to child. This can be done as in-service-training, as continuous medical education and as part of formal training within medical institutions.

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