International Research Journal of Medicine and Biomedical Sciences Vol.1 (5),pp. 38-44, October 2016
Available online at http://www.journalissues.org/IRJMBS/
http://dx.doi.org/10.15739/irjmbs.16.008

ISSN 2488-9032

Original Research Article

Factors assisting HIV + mothers with better feeding options of their babies around the Buea Municipality, Cameroon

Received 22 July, 2016, Revised 20 September, 2016 Accepted 23 September, 2016 Published 18 October, 2016

Ojong-Alasia M,M[1], Tangwa A. Anthony[2], Kwende-Tanjong, O. Lum[3] and *Atanga, M.B. Suh[3]

[1]Department of Nursing, MADONA University Elele Campus
[2]Ministry of Public Health Yaounde
[3]Department of Nursing/Midwifery, University of Bamenda

*Corresponding Author
Email: mbisuh@yahoo.com

The feeding options available and prescribed by culture of a people may promote or assist in reducing Mother-to-Child Transmission (MTCT) of HIV/AIDS positively or negatively. Feeding options prescribed by public health professionals may suit the reduction process but the real feeding options practiced may not. Hence, the study sought to determine feeding options prescribed by culture, actual patterns used, and factors that affect the practices. A cross section of the population was studied both quantitatively and qualitatively using 112 and 16 HIV+ mothers respectively. Ownership of a fridge (AOR=3.1, p<0.01) were significantly associated with a safe feeding option but mixed feeding (64%) was still highly practiced. Strengthening infant feeding counseling and encouraging health promotion interventions at all levels are essential to curb vertical transmission and enhanced child survival.

Key words: HIV/AIDS, MTCT, PMTCT, Infant feeding options, factors

INTRODUCTION

One way of HIV transmission is from an infected mother to her child during pregnancy, labour and delivery, and breastfeeding (World Health Organization, WHO – 2010). This requires studies that seek problems of infant feeding of babies born of HIV+ mothers inorder to prevent breastfeeding and thus limit mother to child transmission.

In Cameroon the problem of vertical transmission and spread of HIV/AIDS within the population including babies is multi-factorial where there are factors related to social and economic situation like poverty creating a conducive environment of the spread of the infection through limited access to health services, lack of bargaining power, and lack of means for better infant feeding options when mother has been found unfit to breastfeed her baby. Another group of factors are related to cultural and social situation like attachment to risky traditional and customary values and practices which include scarification, group circumcision, female genital mutilation to name a few. These customs may impede a mother from using other feeding options even when affordability is no longer the main problem (Cameroon Baptist Convention-CBC Health Board, 2010).

With the knowledge that HIV can be transmitted from the mother to her child during pregnancy, labour and delivery, and breastfeeding period, other feeding options must be used to prevent the transmission through breastfeeding. The risk of transmission during pregnancy with no intervention is 5-10%, during labour and delivery is 10-20% (Wilke, 2004). However the rate of transmission without breastfeeding is 15-30%, but with breastfeeding up to six months the rate stands at 25-35% and with breastfeeding up to 18-24 months the rate stands at 30-45 % (Ministry of Health- MOH, 2008). Therefore the majority of transmission occurs during labour and delivery but the scenario is worst during breastfeeding for up to 24 months with no intervention (WHO, UNAIDS, UNICEF, 2009).

Factors contributing to mother-to-child transmission of HIV include maternal viral load and immunity, obstetric factors and foetal factors (MOH, 2008).

A high viral load in the maternal blood increases the babies' chances of being infected with HIV. Secondly when the mother is in the advanced stage of infection or gets a new infection during pregnancy or breastfeeding, the chances of

transmission to the baby is high. Furthermore maternal factors that increases the chances of the baby being infected includes: low immunity for example CD4 less than 200 mm^3,poor nutritional status, breast conditions like; cracked nipples, mastitis, untreated sexually transmissible infection, recent infection, vitamin A deficiency, and no antiretroviral treatment of prophylaxis(Linkages, 2004).

Foetal factors which favour babies to become infected particularly with regards to breastfeeding include: mixed feeding, duration of breastfeeding, and breastfeeding from an infected mother if the baby has lesions or thrush on the mouth (Wilke 2004).

The four main domains of prevention of mother-to-child transmission of HIV includes: HIV/AIDS counseling and testing; prophylaxis and treatment with antiretroviral; safe obstetric practices; and safe infant feeding methods (MOH, 2008). However the Cameroon Government had adopted the W.H.O four-pronged PMTCT strategies which involve:

First and foremost is primary prevention of HIV in women and young people through: promotion of safe and responsible sexual practices; facilitating access to condoms; early diagnosis and treatment for sexually transmissible infections; decentralization of HIV testing and counseling services, and providing appropriate counseling to HIV-negative mothers.

The Second strategy is prevention of unintended pregnancy among HIV-infected women through: provision of family planning services; promote access to reliable and effective contraceptives, and promote safe sexual practices in particular the systematic use of condoms.

Thirdly the prevention of mother-to-child transmission as seen above and finally is the provision of treatment, management services, and support of infected women with their children and families (WHO, 2010).

Paediatric diagnosis is performed but there is need to repeat the test after 18 months to determine the infection. If child is greater than 18 months, two or more antibody tests confirm or exclude the diagnosis. If child is less than 18 months, a positive antibody test may be false positive therefore an alternative test is required to confirm the diagnosis. A negative HIV antibody test in an exposed infant suggests that the infant is negative and should be confirmed three months after cessation of breastfeeding. For the virology tests remain the ideal for diagnosing HIV in a child less than 18 months. It detects HIV, viral antigen, DNA or RNA in blood. This is done using RNA assay, DNA PCR and P24 antigen (immune-complex dissociated) tests. The p24 has a low sensitivity and high specificity, if positive; child is infected. HIV is diagnosed by two positive virology tests performed on blood samples taken on two separate dates. HIV is excluded by two or more negative test at age greater than one month, one of which is performed at an age greater than four months in a non-breastfeeding infant. If the baby was breastfed, then the testing is done three months after cessation of breastfeeding.

When to do PCR test is determined by the feeding option of the baby. If the child is not breastfeeding, PCR is done from age one month, and repeated after three months. If the child is breastfeeding, PCR is done from the first month of age and repeated three months after cessation of breastfeeding. If test is positive at one month, encourage mother to breastfeed, if negative, encourage mother to stop or shorten duration of breastfeeding. If child is on prophylactic ARV at one month, do PCR 2-4 weeks after stopping the ARV.

When virology tests are not available, HIV can be diagnosed in infants with the following three criteria: WHO stage III or IV plus CD4<20 %(CD4<750) and Total lymphocyte count (TLC) <3000/mm^3 (WHO, 2010).

The 2010 WHO, UNICEF, UNAIDS, UNFPA-Recommendations on HIV and infant feeding

The 2010 revised recommendations have some changes from that of 2006. It recommends that national authorities in each country decide on which infant feeding to practice. For instance, breastfeeding with and antiretroviral intervention to reduce transmission or avoidance of all breastfeeding for formula feed. This differs from the previous recommendations in which the health worker was expected to individually counsel all HIV-infected mothers about the various infant feeding options and it was then the mothers to decide between them. Where ARVs are available, mothers known to be HIV-infected are now recommended to breastfeed until 12 months of age. The recommendation that replacement feeding should not be used unless it is acceptable, feasible, affordable, sustainable and safe (AFASS) remains, but the acronym is replaced by more common, everyday language and terms that mean no breastfeeding at all.

"1. Ensuring mother receive the care they need i.e. *Mothers known to be HIV-infected should be provided with lifelong antiretroviral therapy or antiretroviral prophylaxis interventions to reduce HIV transmission through breastfeeding according to WHO recommendations.*

2. Which breastfeeding practices and for how long i.e. *Mothers known to be HIV-infected (and whose infants are HIV uninfected or of unknown HIV status) should exclusively breastfeed their infants for the first 6 months of life, introducing appropriate complementary foods thereafter, and continue breastfeeding for the first 12 months of life.*

3. When mothers decide to stop breastfeeding

Mothers known to be HIV-infected who decide to stop breastfeeding at any time should stop gradually within one month. Mothers or infants who have been receiving ARV prophylaxis should continue prophylaxis for one week after breastfeeding is fully stopped

4.What to feed infants when mothers stop breastfeeding : *When mothers known to be HIV-infected decide to stop breastfeeding at any time, infants should be provided with safe and adequate replacement feeds to enable normal growth and development.*

5. Conditions needed to safely formula feed:

Mothers known to be HIV-infected should only give commercial infant formula milk as a replacement feed to

their HIV-uninfected infants or infants who are of unknown HIV status, when specific conditions are met:
a.Safe water and sanitation are assured at the household level and in the community, and,
b.The mother, or other caregiver can reliably provide sufficient infant formula milk to support normal growth and development of the infant; and,
c. The mother or caregiver can prepare it cleanly and frequently enough so that it is safe and carries a low risk of diarrhoea and malnutrition; and
d. The mother or caregiver can, in the first six months, exclusively give infant formula milk; and
e. The family is supportive of this practice; and
f. The mother or caregiver can access health care that offers Comprehensive child health services". These descriptions are intended to give simpler and more explicit meaning to the concepts represented by *AFASS (acceptable, Feasible, affordable, sustainable and safe).*

6. Heat-treated, expressed breast milk
Mothers known to be HIV-infected may consider expressing and heat-treating breast milk as an interim feeding strategy
7. When the infant is HIV-infected
If infants and young children are known to be HIV-infected, mothers are strongly encouraged to exclusively breastfeed for the first six months of life and continue breastfeeding as per the recommendations for the general population, that is up to two years or beyond.

Statement of problem

Feeding infants born of HIV+ mothers could be influenced by many factors. It is observed from the UNICEF, WHO, USAID, and UNFPA reports that HIV+ positive mothers can breastfeed for up to six months but culturally prescribed patterns may impede on this and alter the healthy prescribed feeding options. There could be a variety of many other determining factors that deter populations from heeding to such health advice. Based on these the study sought to identify such and proffer recommendations.

Research question

What factors enhance infant feeding options of babies born of HIV+ mothers in the study area?
What feeding options are actually practiced in the study area?
What are some of the determining factors for prescription of a feeding option?
What are some important predictors of feeding options for babies born of HIV+ mothers?

Specific objectives:

To identify enabling factors for choice of infant feeding options for infants born of HIV+ mothers in the Buea Municipality.
To identify the feeding options actually practiced.
To assess the determining factors for prescription of an infant feeding option for HIV+ mothers at the Buea Municipality.

MATERIALS AND METHODS

The study was a cross-sectional descriptive study that involved HIV+ mothers of less than twenty-four months postpartum receiving care in the three healthcare facilities. The mothers were selected by convenience based on who attended the clinic at the time of the survey.

The study used both a quantitative and qualitative technique: An interview with a structured questionnaire was used in the healthcare facilities and an interview guide was used during the in-depth interview with a group of mothers whose status was not known but who were not part of the quantitative study. These were however mothers who accepted to meet the research team at a chosen site in one of the communities on a fixed date. Hence, the quantitative part of the study was carried out among HIV+ mothers receiving care and treatment in the selected healthcare facilities and the qualitative part of the study involved women irrespective of their serological status in a selected community in the study area. The study was conducted and concluded within eleven months from January to November 2010. A non-probability sampling method was adopted. It entailed the systematic recruitment of volunteers as they came to the selected sites to seek services -convenience sampling and met the inclusion criteria, a purposeful sampling was used to select any consenting mothers who were in the quantitative study for the qualitative interviews at level of the community.

Data was collected in two phases, the first with the use of a structured questionnaire for the HIV+ mothers at the health facilities .The 15-variables questionnaire had both closed and open-ended questions which was pre-tested and readjusted to suit the objectives of the study. It was interpreted for those mothers who could neither read nor write, while an in-depth interview technique was used at the level of the community for the selected community-based mothers. The lead questions were on culturally prescribed feeding options, actual feeding practices, and enabling and disenabling factor of feeding options. The Wilke, (2004) questionnaire approach was used. The interview was recorded using a Digital Voice Recorder, Mark : OLYMPUS, Reference N^{o} : VN-2100 complemented with jotted down information for comparison

All questions on the questionnaires were coded as they came from the field and range and consistency error during data collection were checked .The data was entered into the computer and analyze using two statistical software Microsoft Excel version 2007 and Strata statistical software version 10. Multivariate logistic regression analysis was used to show some specifics. Hence, bivariate analyses were entered in a multiple logistic regression analysis to identify key predictors of a safe infant feeding option. A P-value of below 0.05 was set as the level of

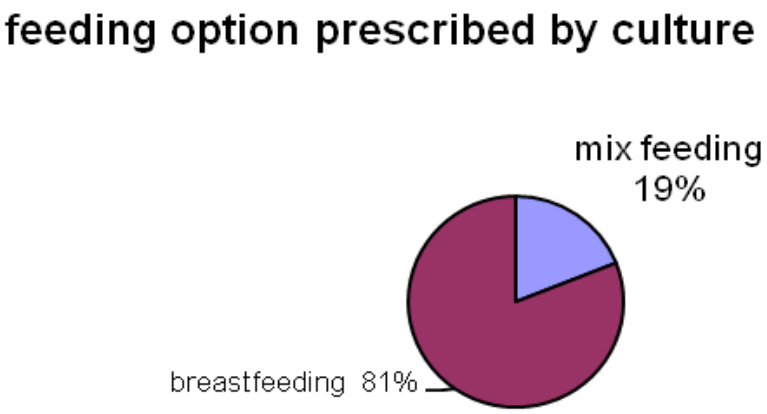

Figure 1: Feeding option prescribed by culture

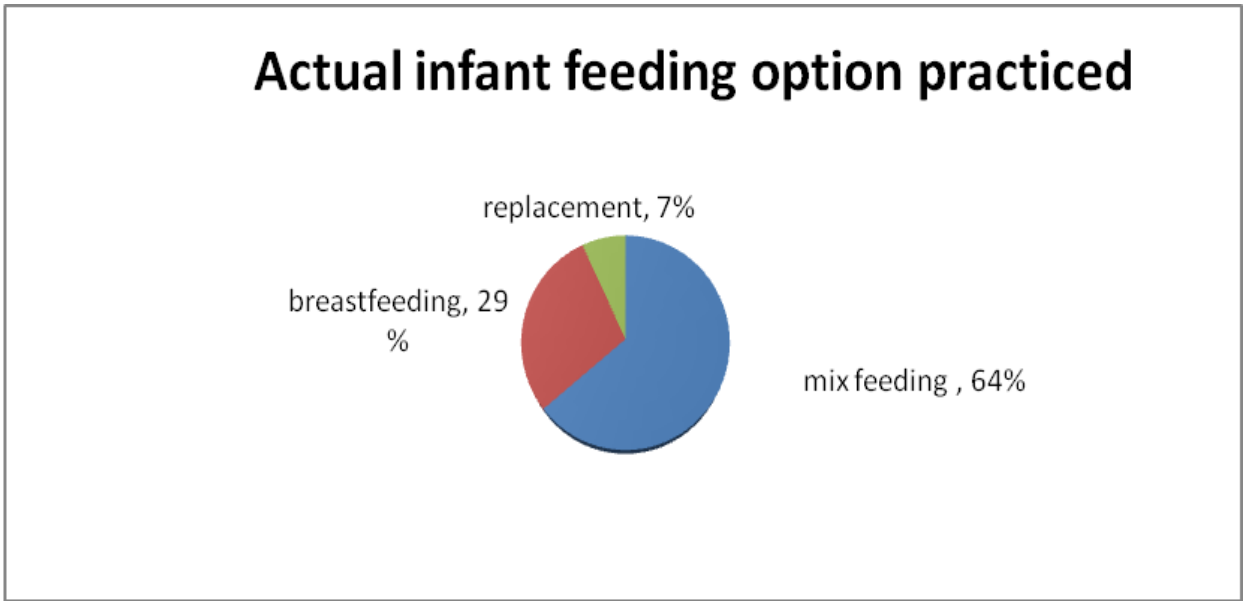

Figure 2: Actual infant feeding option practiced

significance difference. For ethical considerations, informed consent, confidentiality, respect for human rights and scientific integrity (Bonita et al., 2006) were maintained. Ethical clearance was provided by the faculty of Health Sciences ethical review board.

RESULTS

Socio-demographic characteristics

The age range of the sixteen women interviewed in the community was 25 -45 years with a mean of 35 years. A majority of them were married, while one quarter of them were single. One of them was a widow while one had divorced with the husband. Moreover almost half of them were business women, one quarter of them involved in farming. However there was one teacher, a house wife, a student and a hair dresser (N= 16), while the quantitative data was analyzed based on the questionnaires administered to the 112 women from the health facility (N= 112).

Quantitative results

Culture prescribes breastfeeding (81.25%) and mixed feeding (18.75%) (Figure 1). Mixed feeding (64%) was mostly practiced by respondents to exclusive breastfeeding (29 %) and replacement feeding (7%) (Figure 2).

Out of the 48 who practiced replacement feeding, all of

them (100%) practiced it in order to protect the baby, while financial constrain (41.51%), mother or friends' infant feeding attitude (28.30%), and advice from clinic were reasons to practice exclusive breastfeeding. Financial constrain (43.75%), mother or friends' infant feeding attitude and the fact that it is easy to use and cheap were reasons for practicing mixed feeding.

Ownership of a fridge (adjusted OR=3 .11, 95% C.I. (1.17, 8.24), P<0.02) and adequate information on the prevention of mother-to-child transmission of HIV during pregnancy (adjusted OR=0.35, 95% C.I. (0.13, 0.96), p<0.04) were the key determinants of a safe infant feeding option.

Factors enabling the use of an infant feeding option

As concerns enabling factors and benefits of exclusive breast feeding close to three quarters of the women advance the fact that it protects the child from diseases, half of them disclosed that it is cheap and family will not spend, while almost one quarter said it is natural and balanced and one said that there is a demonstration of mother's love. Three women emphasized the following points in favour of breastfeeding: *"breast milk gives power because it contains antibiotics that protects the baby''*, the next said *''child will have extra power as compared to a child artificially fed*", the last woman said *"my second child that was exclusively breast fed is slim than the first, no big belly, and more intelligent, however very few women practice it".*

Enabling factors or the reasons for using replacement feeding by the women was as follows: Almost half chose sickness of the mother, followed by mothers who are working, schooling, or doing business, then women who do not want their breast to sag. A few women disclosed the fact that it can be used to protect the child from diseases and one woman revealed that it is practice when couples have their money or want to show that they are rich. Again another woman said *"mother can go about her daily activities, because baby is not carried by the mother alone''*

With regards to mixed feeding, the enabling factors were found to include schooling, work, business and sickness that may disturb the flow of breast milk. While others revealed that it can be practice when there is insufficient flow of breast milk that cannot satisfy the baby. Another group said it was cheap and easy; while one emphasized that *"I do mixed feeding because it is stress-free, easy going, and in it I can breastfeed at night and during the day the baby is on the artificial feed"*. Cultural reason for mixed feeding were also put forward as one woman highlight the fact that mothers will most often do like all others in their communities thus: *"people follow what prevails in their communities"*

DISCUSSION

Respondent's age-range in the quantitative study was 21 to 46 years, with a mean age of 32.17 years. In the qualitative phase the age range was from 24 to 45 years with a mean of 35 years. This age range is within the age range of those mostly affected in Cameroon, 20 to 39 years (MOH, 2010) and also falls between the reproductive age ranges of 15 to 49 years.

Factors enabling the use of an infant feeding option

One hundred percent of respondents who use replacement feeding acknowledge that they use replacement feeding because it protects their babies from diseases and so HIV by implication. While three factors money (41.51%), parental feeding attitude/culture (28.30), and advice from hospital (20.75) were advanced as reasons for practicing breastfeeding. Practicing mixed feeding was related to money (43.75%), parental feeding attitude /culture (25.00%), and the fact that it is cheap and easy to use (18.75%) each Figure 1. These factors were partially supported by the qualitative study which stressed that sickness of the mother, working, schooling, doing business or refusal to have sagging breast were reasons for practicing both replacement and mixed feeding.

However, the protective, economic and psychosocial importance of breastfeeding was well known by respondents. These results were partly supported by the Ethiopian study which reveals household income (p<0.05) as a predictor of replacement feeding, and parental infant feeding attitude (p<0.01) and infant illnesses as predictors of mixed feeding (Maru and Haidar, 2009).

Water source (p<0.002), ownership of a fridge (p<0.01), level of awareness on the prevention of MTCT of HIV during pregnancy (p<0.003) and breastfeeding (p<0.02), and risks of early replacement feeding (p<0.02) were predictors of the use of a safe infant feeding option (Table 1) .

The actual predictors of a safe feeding options were ownership of a fridge (AOR=3.1, 95% C.I. 1.17, 8.24, P<0.02) and level of awareness on MTCT of HIV during pregnancy (AOR=O.35, 95% C.I. O, 13 , 0.19 , P<0.04) (Table 2) These results confirms the facts highlighted in the National and International recommendation on effective replacement feeding in the context of HIV (MOH, 2008 and WHO, UNICEF, UNAIDS, UNFPA, 2010) . Moreover, when the AFASS conditions are met coupled with adequate knowledge on infant feeding as a result of good counseling, misconceptions are clarified, there is increased awareness and may result to a safe infant feeding option. The results also support the fact that economic factors play a vital role in the decision to choose a feeding option as people who had fridges must be people of high socioeconomic status.

Conclusion

Actual determinants of a safe infant feeding includes: availability of a fridge and adequate knowledge on the prevention of mother to child transmission of HIV. Other potential factors may include: financial constraint, the fact that mother or friend use it, Information, Education and Communication (I.E.C.) in hospitals, and the fact that it

Table 1. Determinants for practicing a feeding option (n=112)

Variable	Categories	Frequency	Percentage (%)
Breastfeeding	stigma/shame	2	3.77
	pressure from relatives	2	3.77
	financial constraints	22	41.51
	my mother/friend practice it	15	28.30
	advice from hospital	11	20.75
	don't know	1	1.89
replacement feeding	protects the baby	48	100.00
Mixed feeding	pressure from relatives	1	6.25
	financial constraints	7	43.75
	my mother/friend practice it	4	25.00
	breast illness	1	6.25
	easy to use/cheap	3	18.75

Table 2. Multivariate logistic regression analysis of important predictors and feeding option practiced

Predictor Variable	Adjusted OR (95% C.I)	P-value
Water source	0.88 (0.55,1.4)	0.61
Availability of fridge	3.11 (1.17,8.24)	0.02
Knowledge on transmission	0.94 (0.34,2.59)	0.91
Knowledge on prevention during pregnancy	0.35 (0.13,0.96)	0.04
Knowledge on prevention during breast feeding period	0.49 (0.20,1.22)	0.13
Knowledge on risk of replacement feeding.	1.01 (0.99,1.04)	0.35

protects the child from HIV. However HIV-infected women express a high utilization rate of replacement feeding if subsidized.

RECOMMENDATIONS

1. That families be sensitized on new approaches as soon as they made available to curb transmission of HIV from mother to child.
2. That affordable feeding options be exposed to mothers whenever they are available
3. That mothers be advised to join any existing HIV/AIDS support groups to learn more of prevention of mother to child transmission.

REFERENCES

Bonita R, Beaglehole R, Kjellstrom T (2006). Basic Epidemiology 2nd Edition. WHO

Cameroon Demographic and Health Survey - DHS III.2004 (2004). Preliminary report, MOH. MINFI. NACC. NIS. MEASURE DHS+. ORC Macro, Calverton, Maryland U.S.A.

Cameroon National AIDS Control Committee. Progress Report n°1 2008 (2008). MOH, WHO,UNICEF,UNAIDS, GLOBAL FUND, CIRCB & ESTHER final report.

Linkages (2004). Prevention of mother-to-child transmission of HIV: A behaviour change communication Guide for Health Workers. Action Now. Zambia.

Ministry of Health (2008). National Guide for global Management of Adults and Adolescents living with HIV/AIDS in Cameroon. MOH, NACC, & WHO team work

Ministry of Health (2008). Prevention of Mother to Child Transmission of HIV. Pocket Book. MOH, NACC, CDC, WHO, & UNICEF joint report.

Ministry of Health (2010). Strategic Plan for fight against HIV/AIDS, National AIDS Control Committee working document, Cameroon.

Ministry of health- National AIDS Control Committee (2008). National HIV/AIDS and STI Control strategic Plan. 2011-2015. Cameroon.

MISANTE (2010). PROPOSITION VIH DU CAMEROUN-SERIE 10. Accès Universel pour la PTME, la prise en charge globale des PVVIH et la prévention du VIH auprès des populations les plus exposées au Cameroun.

UNAIDS/WHO (2007) AIDS Epidemic Update. Available at: www.unaids.org, (Accessed 18th March 2010).

United Nations General Assembly Special Session (2001). Declaration of Commitment on HIV/AIDS. New York, UN report.

WHO (2000). 0perational Guidelines for Ethics Committees that Review Biomedical Research .WHO.

WHO (2010). PMTCT Strategic Vision 2010-2015. Prevention of mother-to-child transmission of HIV to reach the UNGASS and Millennium Development Goals.

WHO, UNAIDS, UNICEF (2009). Towards universal access: scaling up priority HIV/AIDS interventions in the health sector. Progress report 2009. WHO, Geneva. 2009.Available at http://www.who.int/entity/hiv/pub/tuapr_2009_en.pdf (accessed on 10July 2010).

WHO, UNICEF, UNAIDS, UNFPA (2010). Guideline on HIV and infant feeding: Principles and recommendations for infant feeding in the context of HIV and a summary of evidence.WHO,Geneva.http://www.who.int/hiv/pub/mtct/infant_feeding/en/ind ex.html (accessed on 10 July 2010).

Wilke MC (2004). Knowledge about and attitudes towards infant feeding of mothers with HIV infection. HIV/AIDS Forum, University of Johannesburg, South Africa.