AJNM-2014-029 **SOCIAL-CULTURAL DETERMINANTS OF EXCLUSIVE BREASTFEEDING; LESSONS LEARNT FROM EXPERIENCES OF HIV-POSITIVE MOTHERS IN LUSAKA, ZAMBIA**

**ABSTRACT**

Breastfeeding is a culturally accepted way of feeding a baby despite the risk of HIV transmission. In the context of HIV, it is especially important to protect, promote and support ex­clusive breastfeeding for the first six months of life. The aim of this study was to explore social-cultural determinants of exclusive breastfeeding to inform interventions. We utilized ethnographic approaches and triangulation through focus group discussions; in-depth interviews; participant observations and field notes to collect data and saturation was achieved. Thirty HIV-positive mothers were followed at 6 days, 6 weeks, 12 weeks and 18 weeks after delivery. Inadequate knowledge of exclusive breastfeeding was pronounced. Predominantly, mixed feeding was practiced as a cultural norm and to compensate for the delay in initiation of breastfeeding for HIV-exposed infants. Use of herbs were reported for reasons varying from medication to treat abdominal pains and protection of the baby from childhood illnesses.

We conclude that breastfeeding is the customary way of feeding new-born babies, however, the recommended exclusive breastfeeding for all mothers is alien in populations driven by their culture. Therefore, developing culturally-appropriate counselling tools that address known practices has potential to improve breastfeeding in the context of prevention of mother-to-child transmission of HIV.

**KEY WORDS:**

Exclusive breastfeeding, Herbs, HIV exposed infants, HIV positive mothers, Mixed feeding, Social culture,

**INTRODUCTION AND BACKGROUND INFORMATION**

2010

According to the United Nations Program on HIV/AIDS (UNAIDS), at the end of 2013, an estimated 35 million people were living with HIV globally and of these 3.2 million were children less than 15 years, while half of the adults were women. Of the 2.1 million new HIV infections reported, 240 000 were children less than 15 years of age (UNAIDS, 2013)

. In Zambia, the number of women living with HIV who delivered in 2012 was 81,727 out of which 76,963 received efficacious antiretroviral drugs for prevention of mother to child transmission. These indicators showed a drop in the HIV transmission rate from mother to child from 24% in 2009 to 12% in 2012. However, the report showed that 5 in 10 women or their infants did not receive antiretroviral drugs during breastfeeding to prevent mother to child transmission of HIV(MoH 2014) (MoH, 2014). Furthermore, the United Nations (UN) estimated that 12, 000 children aged 0-14 were newly infected with HIV in 2012(UNAIDS 2013). The successes recorded in this endeavor were achieved against the backdrop of cultural, political and social economic challenges. Therefore, reaching the current global goal of eliminating new HIV infections among children by 2015 will require not only accelerated efforts to bring services to prevent children from acquiring HIV infection to scale up, but also steps to ensure that all programmatic elements are fully implemented(UNAIDS 2012). Breastfeeding, and especially early and exclusive breastfeeding, is one of the most valuable interventions for improving child survival and it also confers many benefits in addition to reducing the risk of child morbidity and mortality(WHO, UNAIDS et al. 2010). However, the customary patterns of breastfeeding that support early introduction of fluids and foods have been reported in similar settings(Moland, de Paoli et al. 2010) thus posing an increased risk of HIV transmission. Zambia is a multicultural country with minimal variations in practices within the regions. To aid in achieving the country goal of virtual elimination of mother to child transmission of HIV, informed decisions based on country context research that focusses on cultural determinants of breastfeeding and lessons learnt from the region is required (Shirunga, 2010).

**STATEMENT OF THE RESEARCH PROBLEM**

The success of prevention of mother-to-child transmission of HIV depends on the ability of HIV-positive mothers to implement safer infant feeding practices such as exclusive breastfeeding. In societies that are rooted in the cultural feeding practices, adherence to exclusive breasting is a challenge for mothers to implement.

**PURPOSE OF THE STUDY**

The aim of this research was to explore the social cultural determinants of exclusive breastfeeding to inform interventions on prevention of mother to child transmission of HIV amongst HIV-Positive mothers in Lusaka, Zambia.

**OBJECTIVES**

To examine knowledge of HIV transmission through breastfeeding, to explore the perceived cultural value of breastfeeding and to establish the perceived consequences of failure to adhere to cultural practices.

**RESEARCH QUESTION**

What are the social-cultural determinants of exclusive breastfeeding in Lusaka, Zambia?

**Definitions of keywords/concepts**

**Exclusive breastfeeding** is feeding the baby only breast milk and any minerals, vitamins and prescribed medicines if needed for the first six months of life

**Herbs** are traditional medicines prepared from local wild plants

**HIV-exposed infants** are babies born from HIV-positive mothers

**Mixed feeding** is giving an infant solids and fluids with breast milk

**Social culture** are shared values and beliefs by a group

**Herbs** are traditional medicines prepared from local wild plants

**RESEARCH METHODOLOGY**

**The Design**

This article is based on an ethnographic research study conducted in Zambia from January to September, 2014. The methodology selected follows a qualitative research paradigm (Cresswel, 1998a).

**Research site**

The research was conducted in urban settings of Lusaka using Chelstone and Ngombe Health Centers as entry points to the communities studied. These are sites for government programmes on prevention of mother-to-child transmission of HIV and Antiretroviral therapy.

**Study population**

The focal population studied was HIV-positive mothers and key informants working in the prevention of mother to child transmission of HIV programs.

**Sample**

Thirty (30) HIV positive mothers accessing services for prevention of mother-to-child transmission of HIV (PMTCT) and meeting the selection criteria were recruited and followed for six months. During recruitment, saturation was achieved when there was no longer a variation and diversity in participant characteristics of interest.

All the 6 health care workers in the PMTCT departments were interviewed. Two focus group discussions (FGDs) (comprising 8-12 participants) one from each health center catchment populations studied were conducted with community based volunteers (CBVs) working as lay counsellors. One FGD was conducted with 15 men accessing Antiretroviral therapy and whose spouses had delivered a live baby within the past year prior to this research.

**Sampling techniques**

Purposive sampling was used to select HIV-positive mothers and to maintain a balance in age distribution, recruitment was in age ranges of 18-28, 29-39 and 40+ years. Categories such as education level and social economic status were determined by employing judgmental sampling while maintaining flexibility as the themes emerged. The study sites were carefully selected that catered for women of different social economic status and education (Creswell, 2007:126-129a). To be included in the study the mother should have attended pre-test and post-test counselling; obtained the HIV test results; placed on treatment regime, counselled on infant feeding; having chosen a method of infant feeding; willing and giving written and signed consent to participate in the research. In addition, during follow up, the mother should have had a live baby.

**Trustworthiness**

Accepted as the general standard for establishing trustworthiness for this study, we used the Lincoln and Guba’s (1985) criteria of credibility, transferability, dependability, and conformability.

Credibility was achieved by field experience through reflexivity, thick descriptions of phenomenon through in-depth interviews with mothers and triangulation through focus group discussions and key informant interviews.

To establish the context of study, we provided a comprehensive picture of phenomenon and describing in detail the methods, results, and ideas of the study and this can be replicated in another context.

Dependability was done by using thick description of research methods, triangulation, code and recode procedures as well as sifting the data.

Confirmability was used to appraise the integrity of the results and was achieved by reflexivity, statement of researcher’s beliefs and assumptions while recognizing the limitations of the study.

**Data collection procedures**

Qualitative triangulation was achieved and saturation was reached and the main approaches for conducting the research were participant observations, in-depth interviews and focus group discussions (Creswell, 2007:117-145c). A team comprising the principal investigator (PI), who is the first author and two midwives were involved in data collection. The midwives who were conversant in speaking Bemba and Nyanja, trained in counselling and prevention of mother-to-child interventions were enrolled and trained as research assistants. They underwent a one week training and orientation to the tools, procedures for recruitment of participants, observations and interviewing techniques, use of digital recorders and transfer of the recordings to the computers. This was followed by a one week field orientation to the sites to test the tools which were finalized.

In-depth interviews were conducted to address complex and sensitive topics and to allow mothers to talk about personal feelings, opinions and experiences on breastfeeding. Interviews were conducted in local languages (Nyanja and Bemba) depending on which one the participant was conversant with, although some were conducted in English language. The interviews were conducted with each mother at 6 days, 6 weeks, 12 weeks and 18 weeks and we achieved individual validation. These participants each typically generated a large amount of information when nothing new came out of the interviews and a total of 120 transcripts were produced. The interviews were conducted either at home for mothers that gave permission or at a place convenient to the mother.

Participant observation was essential for detecting meanings, feelings and experiences attached to infant feeding and to describe and identify patterns of breastfeeding relevant for making conclusions. These observations were conducted during health education talks at the health facilities, during the mothers’ visits at the health facilities for growth monitoring and immunizations or at their homes as the situation dictated.

Focus group discussions (FGDs) to complement in-depth interviews with mothers and health care workers were used to explore the diversity within a population on culture and breastfeeding. Two were conducted with Community Based Volunteers and one with HIV-positive men.

Throughout the field work, close supervision was maintained with research assistants through regular meetings and active communication by the PI.

**Data collection tools**

Structured questionnaires were used to conduct in-depth interviews with participants and were based on the overall scope of the study. At each stage of breastfeeding, mothers were expected to observe known cultural practices in the population and the three tools were designed to explore these as the study progressed. At 6days the questions focused on known cultural practices of breastfeeding, at 6 and 12 weeks we verified which practices were observed. At the time of exit from the study (18 weeks) the interviews explored mothers’ experiences of breastfeeding in the context of prevention of mother-to-child transmission of HIV.

The participant observation tool had three specific items to focus on: breastfeeding while at the health centers; interactions with health care workers; the general surrounding of homes for those that were visited and the presence of the family for support and including any aspects that had a bearing on breastfeeding practices.

**Ethical consideration**

Permission to conduct the research was obtained from the Ministry of Community Development, Mother and Child Health. Ethical clearance was granted by the Humanities and Social Sciences Research Ethics Committee of the University of KwaZulu-Natal in South Africa (HSS/0104/013D) and the Biomedical Research Ethics Committee of the University of Zambia (Reference No. 016-11-13). Voluntary participation was accorded with written consent. No identifiers were used to ensure confidentiality and privacy was observed by conducting interviews at a place convenient to the respondent. The participants were free to withdraw from the study and continuity of care was assured at all stages of the study.

**Data Management**

All audio files from digital recorders wew downloaded on the computer and trancribed verbatim from local languages into English language. All transcripts were checked for accuracy, quality and cleaned for anonymity by removing all identifiers. All field notes from observations, informal interviews were typed as soon as they were gathered. All the files were imported into QRS Nvivo 10 version for coding and analysis and a regular backup in the external drives was maintained throughout the project.

**Data analysis**

Data were analyzed using a conceptual framework designed for health policy research with data collection and analysis running concurrently (Ritchie and Spencer, 1994:186). Five major themes emerged; 1) knowledge of HIV transmission through breastfeeding; 2) cultural value of breastfeeding; 3) mixed feeding as a cultural norm; 4 herbal use for babies and mothers and 5) perceived consequences of disregard of cultural practices.

**ANALYSIS**

**Characteristics of study participants**

Thirty (30) mothers recruited were aged between 20-40 years old and were either single or married, employed or unemployed. The HIV positive men were aged between 37-47 years and were either small business entrepreneurs or in formal employment, while the community based volunteers aged 30-58 years were fully attached to the health centers as lay counsellors.

**Knowledge of HIV transmission through breastfeeding**

While participants were aware that HIV and AIDS were serious problems, and that the virus can be transmitted through breast milk, comfort and concern for the safety and wellbeing of the baby was pronounced. It is quite natural that the mothers understood the risk of HIV transmission through breast milk and that the risk was more when a mother had no protection.

…*HIV transmission can be* *at delivery and during breastfeeding. During breastfeeding if you did not prevent then the baby can be infected.*

[Mother, 35years]

Knowledge was based on the cultural value of breastfeeding and the complexities and vulnerabilities created by HIV transmission from the mother to the child as presented in the next section.

**Cultural value of breastfeeding**

The perceived cultural value of breastfeeding was grounded in the culture and the general concept of nutritional value.

*…all the foods are in the breast milk, and even if there is no food at home you can’t worry because the baby has the breast milk…*

 [Mother, 22years]

However, colostrum was perceived to be nutritious while the rest was thought to have low nutritional content.

…*The milk which comes out first (colostrum) is the one which has vitamins, after that then there is nothing that you’re, giving the baby and you will punish the child.*

 [Mother, 25years]

On the other hand, men perceived colostrum as dirt.

*…before breastfeeding the baby, first the dirt, the first milk has to come out so that it is clean that is when you breastfeed the baby the good milk.*

 [Man, 42years]

To compensateand despite infant feeding counselling, mothers practiced the cultural norm of mixed feeding. .

**Mixed feeding as a cultural norm**

Mothers believed that the baby remains hungry on breast milk only and were prompted to mix the feeding with other food types such as orange juice, cow’s milk and light meal porridge. One of the health care workers described how mothers think their babies do not get enough from breast milk.

…*Yes our mothers practice mixed feeding because they feel the baby is not having enough milk from the breast, so they’d want to start giving the baby cow’s milk meanwhile they’re also breastfeeding…*

 [Registered Nurse]

Mothers were in agreement with the belief that the babies cry of pain and hunger and were forced to give other foods and dealing with community pressure was an added challenge.

*In the community they say that you have to make the baby stop crying, mine stopped at three months after I started to give it porridge.*

 [Mother, 25years]

The link between what was taught during infant feeding counselling and the community knowledge posed challenges for mothers to adhere to exclusive breastfeeding.

*…it depends on whether the baby is still hungry even with the breast milk because sometimes some breasts produce more milk others do not. If the baby cries of hunger after you give the breast milk you start giving soft, soft porridge just like that.*

 [Mother, 22years]

Mixed feeding from as early as two weeks was a widely practiced cultural norm based on the understanding that the breast milk is not enough. Elders advised younger generations, resulting in mixed feeding as cultural norm being passed from generation to generation.

 *They want to start feeding him after he has turned two weeks or one month.*

 [Mother, 35years]

*…yes, elderly women say that the baby does not get satisfied with breast milk unless you give him porridge. The elderly ones, even now they talk about it.*

[Mother, 32years]

The results revealed that mothers were more concerned about the immediate needs of the baby than the risks of mixed feeding.

**Herbal use for babies and mothers**

Herbal use was reported for reasons varying from medication, bathing, as well as cleansing the breasts of the mother after the death of a previous baby to ward off evil spirits.

**-Herbal use for medication**

Herbal medication was reportedly given to the baby to drink as a performing ritual to ward off ghosts and health care workers were aware of this practice among HIV-positive mothers.

*…when the baby is discharged and they go back home the older women will tell them to breastfeed but they also give herbs to the baby to drink perceived to clear the stomach.*

 [Registered Nurse]

A respondent in a focus group discussion with men added that the practice was a long standing tradition that needed to be respected.

*…in line with tradition when the child is born the grandmother comes, or I will look for someone, even pay so that they find medicine for the baby to drink and bath. Then they will tie in the waist or the neck of the baby to protect it from chibele (diarrheal disease). It is an old tradition that has been there before clinics came into existence.*

 [Man, 45years]

In some cases herbs were used to treat signs of dehydration or fever.

*…some of them rub the palates of the newborn baby with herbs thinking that there is an abnormality (chapamutu and chamukamwa) thus bruising the palate and definitely while breastfeeding the baby is going to get infected with HIV.*

 [Registered Nurse]

The following constructs confirmed the practice among mothers.

…*the herbal medicine is taken from a ‘mukuyu’ tree to give the baby to drink* *in order to stop vomiting and diarrhea and then the baby will be fine.*

 [Mother, 32years]

Herbal use was also reported for tattoos perceived to ward off the perceived evil spirits of the previous dead baby.

*Others get a razor blade to give traditional tattoos to prevent the spirit of the dead child to follow the new born.*

 [Mother, 23years]

It was observed that mothers did not breastfeed immediately in labour ward because the mother was expected to wash the breasts with herbal medicine before breastfeeding.

-**Herbal use to wash the mother’s breasts**

Washing the breasts with herbs was reported where a mother lost the previous baby in death and was associated with cleansing the breasts of bad spirits and avoids mixing breast milk of the dead baby with the new born baby. This practice, delayed the initiation of breastfeeding after delivery.

…*the way my children died…this time before I breast fed, I washed my breasts with herbs because the baby may start having fits because of the spirits of the children that passed away.*

[Mother, 32years]

**Perceived consequences of disregard of cultural practices**

Fear and insecurity led mothers to adhere to risky practices that were in conflict with the messages from the health facilities. The consequences of failure to observe the culturally defined norms varied from the baby contracting a childhood disease and death.

**-*Chibele (*Diarrheal disease*)***

*Chibele* was perceived to be induced by breastfeeding a baby in public where other babies were assumed to be protected with *Chithumwa* (herbs worn in the neck or waist of the baby or the mother).

…*if your baby hasn’t got the herbs (Chithumwa) in the waist and then you meet with the baby who has, then yours will be infected with Chibele.*

 [Mother, 32years]

**- *Mililo/midulo* (Chest infections)**

This article further reveals practices that were perceived to protect the baby from *Mililo/Midulo* and included *Kupeleka mwana kumpasa,* a practicedone at the first sexual intercourse about 6 weeks to 6 months post-delivery. After sexual intercourse, the semen would be smeared on the baby’s back, joints and chest.

*They teach us that after a baby is born and when a couple wants to resume sexual intercourse, after the act, you get the semen and smear on the baby’s back, joint and chest.*

 [Mother, 29years]

The value attached to the cultural norms and practices was based on respect for tradition, however, without regard for the risk of HIV transmission from the mother to the child.

**DISCUSSION**

One of the most effective interventions of saving millions of the lives of young children is the

Infant feeding when a mother has HIV infection is complex in settings known to be deeply driven by their culture and where mixed feeding is a norm. Mothers have to adhere to exclusive breastfeeding which is one of the fundamental strategies in the PMTCT programs. However, this research brings to the fore, the realities faced by mothers as they choose safer feeding practices for their new born babies.

The conflicting views on the value of breast milk and especially the disregard for the significance of colostrum unveils the gaps in infant feeding counselling. Lack of knowledge of the proven nutritional value of colostrum which contains antibodies, vitamin A, less fat and carbohydrates thus conferring the first immunization the baby requires the first few days after birth and essential for HIV-exposed infants needs to be addressed (WHO, 2003; WHO, UNICEF, UNAIDS & UNFPA, 2012). Similar findings have been reported in Zambia, showing a deep rooted cultural belief that the first milk is dirty and might make the baby sick (Fjeld, Siziya, Katepa-Bwalya, Kankasa, Moland, Tylleskar & PE Group, 2008) leading to delay in initiation of lactation. Delay in immidiate initiation of lactation undermines efforts to prevent HIV infection in the postnatal period and the success of breastfeeding. Given these findings, we assumed that mixed feeding commenced earlier than reported. Mixed feeding with cow’s milk, light maize meal porridge, and orange juice is known to erode the stomach mucus lining of the infant, thus predisposing it to HIV and other infections (MoH, 2014; WHO et al., 2012). A knowledge gap on how to care for new born babies by mothers, where they generally perceived crying to mean hunger and abdominal pains led to their own interpretation of the phenomenon and the subsequent use of traditional herbs to treat diarhoea (*chibele*),chest infections (*midulo/milio),* dehydration (*chapamutu)* and oral thrush *(chamukamwa).* The dosages and frequency of the herbs were not established as often mothers indicated that they were given by the elders already constituted and the effects of these herbs on HIV-exposed infants is not documented in Zambia. Our assumption was that women used herbs due to anxiety and the vulnerability created by lack of knowledge of common causes of childhood illnesses. The existing guidelines on management of childhood diseases should be part of the messages and materials to use during infant feeding counselling (WHO, 2005). We observed that the health facilities did not have the charts to illustrate common childhood ailments that could draw the mothers’ attention during antenatal clinics, children’s clinics and counselling sessions. Therefore, the focus for both individual counselling and group health education should be broadened beyond infant feeding methods, to cover a variety of subjects that have a bearing on child survival among the HIV-exposed infants.

Group health education is the main method of teaching in the Maternal, Neonatal and Child Health departments. This is meant for mothers to clarify any issues related to maternal and child health including prevention of mother-to-child transmission and serves as a group pre-test counselling session (MoH, 2010). However, the health care workers adopted a traditional approach that leaned towards instructive and prescriptive models while assuming the position of authority to tell mothers to exclusively breastfeed, thus creating a distance between themselves and the mothers. Critics of global policy guidelines on infant feeding and HIV have highlighted that the social and cultural distance between the producers and implementers of the infant feeding guidelines with its many recipients has generated a sense of helplessness, confusion, guilt and fear among the ones involved in the intervention (Koricho, Moland & Blystad, 2010; WHO, UNAIDS, UNFPA & UNICEF, 2010). Important issues of infant feeding should be emphasized during individual infant feeding counselling to avoid group dynamics observed in this research where mothers systematically detached themselves from voices that seemed to undo health education messages.

**CONCLUSIONS**

We conclude that a mix of cultural norms of breastfeeding are known and are holding up against current PMTCT interventions among the population studied and in similar settings (Chinkonde, Hem & Sundby, 2012, Madiba and Langa, 2014). The magnitude of the HIV pandemic is a big challenge in resource constrained countries of Sub-Saharan Africa where cultural norms are rooted in the way of lives of people. We reiterate that prevention of mother-to-child transmission of HIV programs will vary in effectiveness in different contexts unless they fundamentally respond to socio-cultural norms as lived out in communities they intend to serve (Blystad, Van Esterik, De Paoli, Sellen, Leshabari & Moland, 2010). The health care system should critically analyze available opportunities to improve breastfeeding practices among all mothers accessing Maternal Neonatal and Child Health services.

**RECOMMENDATIONS**

1. Intensify promotion of exclusive breastfeeding among all mothers accessing MNCH services.
2. Develop culturally-appropriate counselling tools that address the known cultural practices of the populations affected.
3. Strengthen effective communication skills among health care workers and provide frequent updates on infant feeding guidelines in MNCH departments to avoid distorted information trickling down to the mothers and the community.
4. Design strategies to facilitate integration of spouses, family (in-laws, mothers, grandmothers) in care to facilitate accountability of behavioral practices.

**LIMITATIONS OF THE STUDY**

We recognized lack of generalization of the findings beyond the group studied. However, this did not weigh down the value of research findings to inform interventions and improve breastfeeding practices among HIV-positive mothers.

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Reference List

BLYSTAD, A., VAN ESTERIK, P., DE PAOLI, M. M., SELLEN, D. W., LESHABARI, S. C. & MOLAND, K. M. 2010. *Reflections on global policy documents and the WHO's infant feeding guidelines: lessons learnt*. *International Breastfeeding Journal,* 5**,** 18.

CHINKONDE, J. R., HEM, M. H. & SUNDBY, J. 2012. *HIV and infant feeding in Malawi: public health simplicity in complex social and cultural contexts.* *BMC Public Health,* 12**,** 700.

CRESWELL, J. 2007. *QUALITATIVE INQUIRY AND RESEARCH DESIGN,* 2nd Edition, London Sage Publications

FJELD, E., SIZIYA, S., KATEPA-BWALYA, M., KANKASA, C., MOLAND, K. M., TYLLESKAR, T. & GROUP, P.-E. S. 2008. *'No sister, the breast alone is not enough for my baby' a qualitative assessment of potentials and barriers in the promotion of exclusive breastfeeding in southern Zambia*. *International Breastfeeding Journal,* 3**,** 26.

KORICHO, A. T., MOLAND, K. M. & BLYSTAD, A. 2010. *Poisonous milk and sinful mothers: the changing meaning of breastfeeding in the wake of the HIV epidemic in Addis Ababa, Ethiopia.* *International Breastfeeding Journal,* 5**,** 12.

MADIBA, S. & LANGA, J. 2014. *Cultural practices interfere with adherence to exclusive infant feeding: A qualitative study among HIV positive post natal women in Hammanskraal, South Africa.* *African Journal for Physical, Health Education, Recreation and Dance (AJPHERD)* 1**,** 264-278.

MOH 2010. National Protocol Guidelines for Infant feeding; *Integrated Prevention of Mother to Child Transmission of HIV/AIDS Lusaka*: Ministry of Health.

MOH 2014. Zambia Country Report; *Monitoring the declaration of Commitment on HIV and AIDS and the Universal Access.* Lusaka: Ministry of Health and National AIDS Council.

MOLAND, K., DE PAOLI, M., SELLEN, D., VAN ESTERIK, P., LESHABARI, S. & BLYSTAD, A. 2010. *Breastfeeding and HIV: experiences from a decade of prevention of postnatal HIV transmission in sub-Saharan Africa*. *International Breastfeeding Journal,* 5**,** 10-16.

RITCHIE, J. & SPENCER, L. 2002. Qualitative data analysis for applied policy research. *The qualitative researcher’s companion***,** 305-329.

SHIRUNGA, M. 2010. *Cultural and Social Factors Impacting on the Programme to Prevent-Mother-To-Child-Transmission (PMTCT) of HIV in Namibia: A Case Study of the Kavango Region.* Master of Medical Anthropology Research, University of Western Cape.

UNAIDS 2012. Global report: UNAIDS report on the global AIDS epidemic, Geneva, United Nations AIDS programme.

UNAIDS. 2013. *UN estimates with uncertainty abounds* [Online]. UNAIDS. Available: http://www.unaids.org/en/resources/documents/2014/HIV\_estimates\_with\_uncertainty\_bounds\_1990-2013 [Accessed 07/11/2014.

WHO 2003. Global Strategy for Infant and Young Child Feeding. Geneva: World Health Organization.

WHO 2005. *Handbook IMCI: Integrated management of childhood illness*, World Health Organization. Department of Child and Adolescent Health. Geneva

WHO, UNAIDS, UNFPA & UNICEF 2010. HIV and Infant Feeding Guidelines, Principles and recommendations for infant feeding in the context of HIV and a summary of evidence. Geneva: World Health Organization.

WHO, UNICEF, UNAIDS & UNFPA 2012. *2010 WHO Guidelines on HIV and Infant Feeding*: *An updated framework for priority action.* Geneva: World Health Organization