

Utilization of PMTCT services in Awassa town, Ethiopia

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Abstract

Background- Mother to child transmission of HIV (MTCT) is the major source of HIV infection among children under the age of 15 years. For the prevention of MTCT (PMTCT) a package of services including HIV counselling and testing, provision of prophylactic antiretroviral (ARV) drugs for mothers and babies, safe delivery practices and infant feeding counselling is made available. The effectiveness of PMTCT program largely depends on utilization of prophylactic ARV drugs by the women and their babies. In resource poor settings Nevirapine (NVP) single dose given to women during labour and to babies within 72 hours of birth prove to reduce the MTCT by 41%. In Ethiopia the PMTCT program was first launched in 2003 and is being scaled up across the country. According to the 2006 WHO report only 3% of the women in need of prophylactic NVP received the drug and only 28.1% of women attending antenatal care where PMTCT services were offered enrolled into the PMTCT programs. The PMTCT program was launched in Awassa Health Centre in 2005 with an opt-in approach then shifted in to an opt-out approach since August 2006.

Objective -To assess utilization of PMTCT services and to identify determinants of the PMTCT service utilization in Awassa town, Ethiopia

Method -A cross sectional triangulation study using both quantitative and qualitative methods was conducted from January to July 2006 and in September 2007. In the quantitative part 377 women who had been visited two antenatal clinics in the town participated in the survey when HIV testing was offered in an opt-in approach. A trained data collector did the survey using a pretested structured questionnaire. PMTCT registers found in Awassa Health Centre were reviewed to assess the changes in PMTCT service utilization before and after the introduction of an opt-out approach. Nineteen in-depth interviews with nurse/midwife counsellors working in eight VCT/PMTCT clinics were conducted in their respective work places. Twenty one exit interviews were conducted with women after posttest counselling in Awassa Health Centre. Participant observation was also conducted in Awassa Health Centre PMTCT site. The qualitative interviews were conducted by the principal investigator using prepared interview guides.

Results- The PMTCT services utilization was 9.8% (37/377) among the survey participants'. PMTCT service utilization was independently associated with being attending antenatal care in Awassa Health Centre (OR 4.6, 95% CI 1.7-12.5), being aware of the availability of NVP for PMTCT (OR 4.3, 95% CI 1.4-12.8) and having more than one antenatal visits (OR 2.1, 95% CI 0.9-5.1). The VCT service utilization in non antenatal setting was 49.4% (163/340) and in 83.2 of the cases the women were tested together with their husband. VCT service utilization in non antenatal setting was independently associated with having discussion with husband about HIV testing before hand (OR 8.5, 95% CI 3.3-21.9) and husband ever tested for HIV (OR 28.1, 95% CI 13.8-57.4).

The PMTCT registers revealed that among women who attended antenatal care in Awassa Health Centre only 9.7% got pretest counselling on PMTCT when the service was offered in an opt-in approach while 38.9% when the services was offered in an opt-out approach. Among the women who got pretest counselling 82.6% were actually tested during the opt-in approach and 98.8% during the opt-out approach. However, there was a drop in NVP utilization by the women and babies after the introduction of an opt-out approach. In opt-in approach 26 of 27 positive women and 24 infants received NVP whereas 25 of 30 positive women and only 8 infants received NVP during the opt-out approach.

From the in-depth interviews, exit interviews and participant observation three major categories were identified to be barriers to PMTCT service provision and utilization. The first category was the missed opportunities for pretest information. Pretest information on PMTCT was seldom offered to antenatal attendees because of shortage of resources, counsellors' perceived lack of technical competence to offer PMTCT counselling and poor commitment of PMTCT counsellors to offer PMTCT counselling. The second category was the PMTCT service organization. The services were organized in many service points that require multiple encounters. This was experienced as an invasion of privacy and implied risks of disclosure and breach of confidentiality as well as unduly long waiting that contributed to the women for becoming dropouts. The third category was the testing situation. Women appeared not to make informed choice and decision for HIV testing. Their decision is largely influenced by the counsellors and some were tested just to comply with the counsellors' advice. This lack of autonomous decision to test was affecting NVP utilization.

Conclusion -The PMTCT service utilization was surprisingly low despite the relatively high level of HIV testing in non antenatal settings, encouraging husband involvement in HIV testing and high level of women's awareness on MTCT/PMTCT. The underutilization of the PMTCT services is associated with weakness within the health care system to implement the program. When the overall program performance is translated into potential averted infections; only 3 infections during the opt-in approach and only 1 infection during the opt-out approach would have been averted. This demonstrates a very negligible impact of the program when compared to the expected outcome and the resources used to run the program. Therefore, we recommend an optimal utilization of resources, re-organizing the PMTCT services to ensure full integration of the program, minimize referrals and training on PMTCT for all staff involved in the provision of maternal care services. Strengthening the counselling services should also be considered.

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List of acronyms and operational definition

Acronyms

AIDS	-	Acquired Immunodeficiency Syndrome
ANC	-	Antenatal Care
ARV	-	Antiretroviral Drugs
CDC	-	Centre for Disease Control
HAPCO	-	HIV/AIDS Prevention & Control Office
HIV	-	Human Immunodeficiency Virus
MOH	-	Ministry of Health
MTCT	-	Mother to Child Transmission of HIV
NVP	-	Nevirapine
PMTCT	-	Prevention of Mother to Child Transmission of HIV
VCT	-	Voluntary Counselling and Testing
WHO	-	World Health Organization
ZDV	-	Zidovudine

Operational definitions

Dropout - when women leave the PMTCT program after being enrolled

Enrolled - when a woman is offered with pretest counselling for PMTCT in ANC room

Missed opportunity - when a pregnant woman attending antenatal care services do not offered pretest counselling on PMTCT

Opt-in approach - is a testing approach synonymous with voluntary counselling and testing. In this approach a woman is requested to undergo HIV testing voluntarily after pretest counselling on PMTCT.

Opt-out approach - is a testing approach synonymous with routine offer. In this approach HIV testing is conducted unless the women refuse to have the test.

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CHAPTER 1- INTRODUCTION AND BACKGROUND

Introduction

Mother to child transmission of HIV (MTCT) continues to be the major source of HIV infection among children under the age of 15. Although MTCT can occur any time during pregnancy, labour and delivery and through breast feeding, about half of the transmissions are occurring towards the end of pregnancy, during labour and delivery (Kourtis, Lee et al. 2006). Prophylactic ARV drugs given during the prepartum, intrapartum and postpartum period has proved to reduce the transmission to less than 2% in non breast feed infants and about 15% in breast feeding infants (Guay, Musoke et al. 1999; Volmink, Siegfried et al. 2007). However, a decade of experience shows that utilization of Prevention of Mother to Child Transmission of HIV (PMTCT) services in general and prophylactic ARV drugs in particular are low especially in resource poor settings where the transmission rate is high. According to the 2006, UNAIDS report, only 6% of HIV positive women living in sub Saharan Africa got prophylactic ARV drugs (UNAIDS/WHO 2006).

To improve the PMTCT service utilization in resource poor settings various strategies and initiatives have been tried. Although various factors are affecting utilization of PMTCT services, poor access to the services reduced the potential impact of the PMTCT program. In spite of the high antenatal attendance many women are not given the opportunity of HIV testing either because the PMTCT services are unavailable or the quality of the counselling and testing service are poor (Karamagi, Tumwine et al. 2006). In 2004, the UNAIDS/WHO reformulated the HIV testing policy from an opt-in to an opt-out approach in antenatal settings to facilitate the provision of prophylactic ARV drugs for PMTCT. The policy gives direction to mainstream HIV testing as part of routine Ante Natal Care (ANC) services (WHO 2004).

The introduction of the opt-out approach has dramatically reduced the missed opportunities and increased the proportion of women being tested (Chandisarewa, Stranix-Chibanda et al. 2007; Creek, Ntumy et al. 2007). However, the increase in the rate of testing was not accompanied by an increase in the percentage of women and babies receiving prophylactic ARV drugs. It is noted that the percentage of babies receiving post exposure prophylactics are

persistently lower than women's receiving prophylaxis drugs for PMTCT regardless of the testing approach employed. In Malawi when the HIV testing has been offered in an opt-in approach, 45% of the positive women received NVP yet only 34% babies received NVP (Manzi, Zachariah et al. 2005). Similarly, in the Southern Region Ethiopia, the trends in PMTCT utilization show a decreasing percentage of babies receiving NVP (from 38% in 2003/4 to 27% in 2006/7) despite an increasing percentage of women receiving NVP (SNNPR Health Bureau 2007).

It is not evident that the women who receive the prophylactic drugs actually use them. In fact the feasibility of usage in a low resource setting is questionable. A study from Zambia shows that among positive women who received NVP, 26% were found non adherent when checked for cord blood (Stringer, Sinkala et al. 2003) demonstrating the challenges to adherence to a recommended regime. In an opt-out approach the testing being initiated by health care providers could have an impact on adherence. Rennie and Behets argue that high compliance to the routine testing offer does not really reflect the client voluntariness to test (Rennie and Behets 2006).

Utilization of PMTCT services in Awassa, Ethiopia has not been documented therefore this study sought to assess the PMTCT service utilization and to specifically identify factors that favour PMTCT service utilization. We also did a comparison of an opt-in and an op-out HIV approach in terms of missed opportunities, the proportion of women being tested and NVP utilization by the women and the babies in Awassa Health Centre (the only PMTCT Centre in Awassa town where the study was conducted). Finally the study identifies factors hindering PMTCT service utilization as experienced by providers and users.

Background

The Study area

Ethiopia is located in sub-Saharan region in the horn of Africa. Over 77 million people live in the country, where about two third of the population are women and children under the age of 18. The country is sub divided into nine main administrative regions. The Southern Nation Nationality Peoples Regional State (henceforth Southern Region) where the study was conducted is the third most populous and the most rural region in Ethiopia. Of the 15 million inhabitants of the region, over 90% are living in rural areas. The region is home for 56 ethnically diverse people (Central Statistical Agency of Ethiopia 2006). Like the other regions in the country, the health service coverage in Southern Region is low and the public health care institutions are often understaffed. Over 2 000 public health care facilities are operational in the region which is only about 55% of the required standard (3 651). Hundred and seventeen physicians and 4 041 nurses are working in the region, which gives a ratio of 1 physician to over 100 000 people and 1 nurse to over 6 000 people (SNNPR Health Bureau 2007).

The Southern region is administratively subdivided into 14 zones. Sidama zone is the second most populous zone in the region with about 3 million inhabitants. Awassa town where the study was conducted is the capital of the region and of the Sidama zone located 275 Kilometres south of the capital city, Addis Ababa. Over 130 000 inhabitants are living in Awassa town alone (Central Statistical Agency of Ethiopia 2006) and pregnant women constitutes 4.4% of the population. In 2006 over 5 000 pregnancies were expected to occur in Awassa town. The antenatal service coverage was reported to be 61% and 18% coverage of skilled attendants during birth (SNNPR Health Bureau 2007).



Fig 1- Map of Ethiopia

All kinds of health care institutions (public, private and non-governmental) have been rendering health care services in the town including maternal health care services. Yet, delivery services are provided only in the public institutions and in the private hospital

Overview of the HIV/AIDS situation

The Global and the Regional HIV situation

HIV/AIDS is a global pandemic, currently about 33.2 million people are living with HIV worldwide. Of these 15.4 millions are women and 2.5 millions are children under the age of 15 years. About 2.5 million new infections occurred in 2007 of which 420 000 of the new infections were among children under 15 years (UNAIDS/WHO 2007). Over 90% of the HIV infections among children are due to MTCT and every day more than 1 800 infants are getting new HIV infections from their mothers during pregnancy, labour and delivery and breast feeding (Kourtis, Lee et al. 2006).

Even though HIV/AIDS is said to be a global pandemic, the sub Sahara African region is the worst affected. According to the 2007 United Nation (UN) estimate, over 22 million HIV infected people are living in sub Saharan Africa. The prevalence in this region is estimated to be 5.0% (UNAIDS/WHO 2007). Nearly 90% of the HIV infected children are living in this region (UNAIDS/WHO 2006).

The HIV/AIDS situation in Ethiopia

The adult (15-49 years) HIV prevalence in Ethiopia seems to be levelled off at 2.1% since 2005 (MOH 2007). The prevalence of HIV in Ethiopia is the lowest compared to other countries in the east African region such as Uganda (6.7%) and Kenya (6.1%). However, because of the big population, about 1 million HIV infected people are estimated to live in Ethiopia (UNAIDS/WHO 2007). The prevalence among women is 1.5 times higher than the prevalence among men and was estimated to be 3.5% among antenatal attendees. In 2007 alone 75 420 pregnant women were living with the virus and the annual HIV positive births were 14 148. Over 64 000 children under the age of 14 were HIV positive and over 10 000 of HIV infected children died in 2007 alone (MOH 2007).

The HIV/AIDS situation in the Southern region

According to the 2007 HIV/AIDS point estimate, the adult HIV prevalence in the region is 1.4 which is reported to be the lowest in the country. The urban prevalence surpasses the rural prevalence 10 times (7.5 Vs 0.8) and the prevalence among women is 1.5 times of the men (9.1% Vs 6.1%) (MOH 2007). Great variation in HIV prevalence has been reported across the urban antenatal surveillance sites in the region ranging from 3.1% in Hossana hospital to 9.3% in Dilla hospital in 2005. Awassa Health Centre has been serving as a sentinel surveillance site since 1998. The HIV prevalence among Awassa Health Centre ANC attendees has been showing a declining trend, from 14.4% in 1998 to 9.2% in 2005 (MHO/HAPCO 2006).

In 2006 alone 11 333 HIV positive pregnant women were living in the region and 2 205 HIV positive babies were delivered. There are about 10 000 HIV positive children in the region and 1 774 of the infected children die of the virus each year. Despite the availability of PMTCT services the vast majority of children are acquiring the virus and are dying (MHO/HAPCO 2006).

Prevention of mother to child transmission of HIV (PMTCT)

With no intervention about a third of HIV positive women will transmit the virus to their children during pregnancy, labour and delivery and through breastfeeding (WHO 2003c). To halt the MTCT various interventions has been implemented since the time MTCT was recognized. Preventive interventions aimed at reducing MTCT largely focusing on prevention of intra-partum and post-partum transmission. In 1994 the Paediatric AIDS Clinical Trail Group (ACTG 076) reported the efficacy of Zidovudine for PMTCT which actually cut the MTCT by two third among formula fed infants (Edward M. Connor 1994). Since then, different antiretroviral prophylaxis are being tried and used globally. In the most affluent regions of the world a combination of ARV drugs reduce the vertical transmission rates to about 1-2% among formula fed infants. Combination therapy is associated with a prolonged suppression of viral replication with marked reductions in viral load as well as a delay in the emergence of viral resistance (Volmink, Siegfried et al. 2007).

However, to salvage the large proportion of children born to HIV positive women in poor resource settings the simpler and less costly single dose NVP regime continued to be the popular prophylactic ARV choice. The single dose NVP regime has demonstrated comparable efficacy to short course ZDV regime with more cost saving. Single dose NVP given to women during the intrapartum period and to babies within 72 hours of birth reduces the MTCT by 47% (Guay, Musoke et al. 1999; Volmink, Siegfried et al. 2007).

The PMTCT service in Ethiopia

HIV/AIDS prevention effort in Ethiopia was started before the official report of the first AIDS case as early as 1985. A task force was assigned to design HIV/AIDS control strategy in 1985. In spite of the early efforts the first national HIV/AIDS policy was drafted as late as in 1991 and approved even later in 1998 (Yemane Berhane 2005). The PMTCT service in Ethiopia was introduced by the Nigat project in 2001. The project was the first clinical trial to assess the preventive efficacy of the single dose NVP for PMTCT among three groups of HIV exposed infants whose mother practiced different feeding methods. The feeding practices were exclusive breast feeding, exclusive formula feeding and mix feeding. Pregnant positive women visiting three hospitals in Addis Ababa (the capital city of Ethiopia) were included in the study. The finding of the study further proved the high efficacy of single dose NVP in

reducing MTCT among non breast fed and exclusively breast fed infants but found less efficacious for infants on mix feeding (both breast milk and complementary feeding) (Abashawl 2004; Volmink, Siegfried et al. 2007).

Meanwhile the National PMTCT guideline was developed in 2002 (Garbus 2003). In 2003/4 free national PMTCT programs was introduced in selected hospitals throughout the country by Hareg project which is a joint partnership between the Ministry of Health (MOH), HIV Prevention and Control (HAPCO), UNAIDS and the Centre for Disease Control (CDC) funded by Presidential Emergency Plan for AIDS Relief (PEPFAR). The Hareg project was supporting the government health institutions across the country to ensure access to NVP and counselling on safe delivery and infant feeding (Yemane Berhane 2005; UNICEF 2006). All the PMTCT services are supposed to be linked to the existing reproductive health services (HAPCO 2006). According to the national HIV/AIDS road map 2004 - 2006, by the end of 2006 it was planned to provide PMTCT services in 89 hospital and 250 health centres but only 72 centres were offering PMTCT services throughout the country in 2005 (UNICEF 2006).

PMTCT services in the Southern region

The PMTCT program was first introduced in the region in 2003/4 in Dilla hospital. Dilla Hospital is located about 90 Kilometres south of Awassa town and one of the sites selected for PMTCT by the Hareg project in 2004 (UNICEF 2006). In response to the national rapid scale up plan, more hospitals and health centres were selected to offer PMTCT services. In 2005, among the health institutions who were supposed to offer PMTCT services in the region, only 8.9% (32/372) were offering (MOH 2006) whereas 24% (91/372) in 2007. In 2007, 91 sites were offering PMTCT service in the region scattered predominantly in urban and semi urban areas (SNNPR Health Bureau 2007).

The Awassa PMTCT centre

The PMTCT program in Awassa Health Centre was launched in April 2005. The PMTCT centre is a referral centre for PMTCT and provides complete PMTCT services to pregnant women. There are two more antenatal clinics in the town which provide antenatal VCT services namely Mary Joy and Family Guidance Association. Pregnant women who found to be HIV positive are referred to Awassa health Centre for NVP, delivery service and infant

feeding counselling. The Awassa PMTCT centre had been the sole provider of complete PMTCT service in Awassa town until August 2006. In August 2006 another PMTCT centre was launched in Awassa referral hospital located about 4 to 5 Kilometres from the city centre. In spite of the launching of this new PMTCT centre, the PMTCT centre in Awassa Health Centre has continued to be the major PMTCT service provider and referral centre in the town. The PMTCT services in Awassa Health Centre had been offered in an opt-in approach until August 2006 then shifted to an opt-out approach.

There are three more VCT centres in Awassa town, namely Social Support for AIDS, Bethezatha and Youth centre exclusively providing HIV counselling and testing and one centre called Tilla which provides only HIV counselling. All of these centres are non governmental.

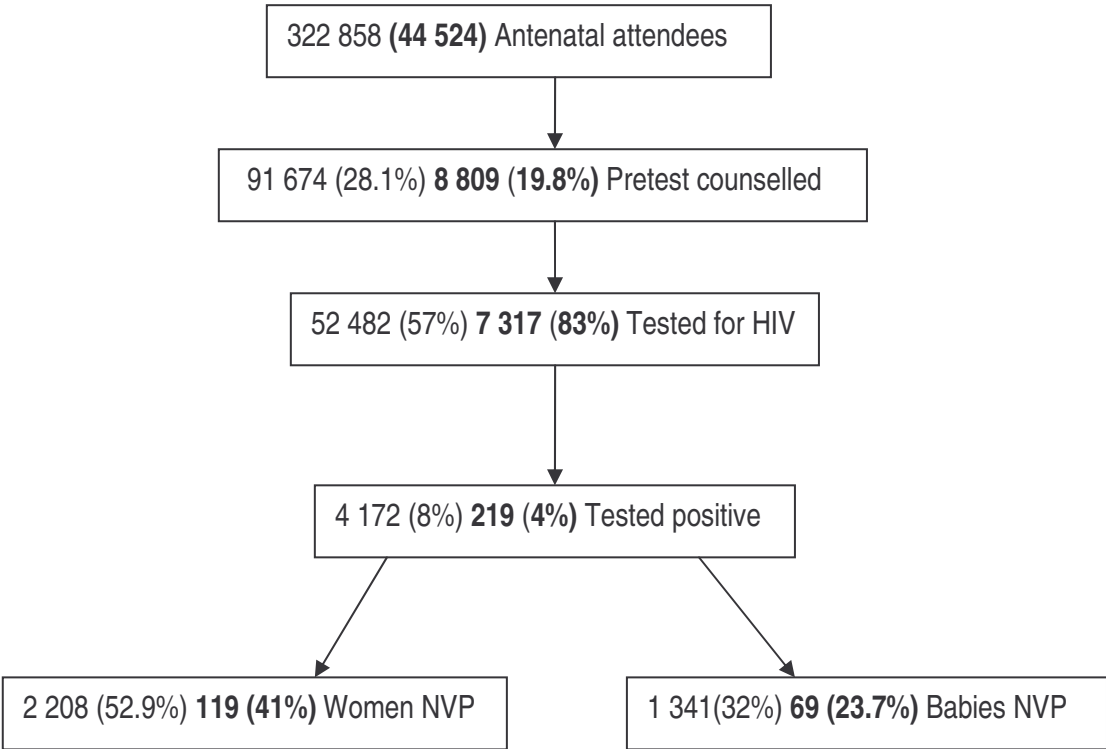
PMTCT service utilization

Given the availability of various prophylactic antiretroviral drugs, the PMTCT coverage is below the target globally. The 2006 UNAIDS report revealed that actions directed to mitigate MTCT are not satisfactory. Globally less than 10% of the HIV positive women who are in need of prophylactic ARV received the drug, which is far behind the 80% 2005 global target. The coverage was even less (6%) in the sub-Saharan region where the majority of HIV positive births occurred (UNAIDS/WHO 2006).

The PMTCT service utilization in Ethiopia

According to the UNAIDS 2006 report, the PMTCT service utilization in Ethiopia is found to be one of the lowest i.e 3% coverage (Joint United Nations Programme on HIV/AIDS. 2006). In Ethiopia over 3 million pregnancies were estimated to occur in 2005 but only about 10% (322 858) of the pregnant women were attending ANC in places where PMTCT services were offered. Of them 71.9% did not get the opportunities for pretest counselling. (See fig - 2)

Fig 2 - Flow chart showing PMTCT service utilization in Ethiopian and in the Southern region in 2005. (The numbers in bold are values for the Southern region)



Source- AIDS in Ethiopia 6th Report, 2006

Among the women who have got the pretest counselling, 57% were actually tested for HIV and 8% were found positive. From the positive women 53% (2 200) received NVP and only 32% (1 1341) of the babies received NVP (MHO/HAPCO 2006). (See fig- 2)

The PMTCT service utilization in the Southern region

Generally speaking, the PMTCT service utilization in the Southern region is lower than the national average. As it is indicated in the flow chart above (fig - 2, the number in bold are figures for the Southern region), in 2005 about 20% of the pregnant women attended in PMTCT services centres got pretest counselling where 41% (119) of the women received their NVP and 23.7% babies received NVP (MOH/HAPCO 2006) (See fig -2).

However, the overall trend of PMTCT service utilization in the region has shown some improvements overtime except the NVP utilization by babies. Owing to the PMTCT site

expansion and the introduction of an opt-out approach to some PMTCT sites of the region in 2006/7 the proportions of new antenatal attendees tested for HIV and women receiving NVP have increased. Nonetheless, the HIV test acceptance does not show a steady pattern of increase. The lowest test acceptance was reported in 2003/4 whereas the highest test acceptance was in 2005/6 (SNNPR Health Bureau 2007). The HIV prevalence among the pregnant women shows a declining trend. The decline in HIV sero-prevalence could be attributed more to the expansion of the PMTCT program in less prevalent rural sites than the actual decline in HIV incidence. (See table -1)

Table 1- PMTCT services utilization in Southern region from 2003 to 2007

Year	ANC Attendees	Pretest counselled	Tested from ANC attendees	Tested from pretest counselled	HIV Positive	Women Received NVP	Babies Received NVP
		NO(%)	NO(%)	NO(%)	NO(%)	NO(%)	NO(%)
2003/4	3970	873(22)	614(16)	614(70)	34(5.5)	16(47)	13(38)
2004/5	5086	1 192(23)	752(15)	752(64)	39(5.2)	21(54)	14(36)
2005/6	48449	9 670(20)	8 007(16)	8 007(83)	328(4.1)	144(44)	85(26)
2006/7	79497	28 958(36)	22 299(20)	22 299(77)	727(3.3)	647(90)	196(27)

Source- Southern Region Health SNNPR Health Bureau, 2007

In spite of the increased NVP utilization by the women in 2006/7 the large proportion of babies born to HIV positive women did not receive NVP. The discrepancies between NVP utilization by the women and babies seems to be widening year by year. In the first years of PMTCT service implementation 38% of the babies received NVP while 27% in 2006/7 (SNNPR Health Bureau 2007). (See Table -1)

CHAPTER 2 - LITERATURE REVIEW

The dynamics of MTCT and associated risk factors

About one third of children born to HIV positive women acquire HIV infection from their mother. The overall transmission among non breast feeding infants is reported to be 15% to 25% (Edward M. Connor 1994) and about 20% to 45% in breast feeding infants. The risk of transmission during pregnancy is 5% to 10% where by the bulk of the transmission is occurring at the end of the pregnancy. About 10% to 20% of the transmission is occurring during labour and delivery accounting for 70% of the over all transmission in non breast feeding infants. About 5% to 20% of the transmission occurs during breast feeding. Risk factors favouring the peripartum transmission of HIV includes maternal high plasma viral load, stage of maternal HIV disease, low CD₄ count, the presence of another sexually transmitted infection during pregnancy, certain obstetrical procedures, uterine infection, preterm delivery, increased duration of labour after rupture of foetal membrane, duration of breast feeding, some breast conditions (such as mastitis, cracked nipple), conditions affecting the infants' gastrointestinal tract and the kind of breast feeding practiced (infants on mix feeding have higher tendency to acquire HIV than those on exclusive breast feeding) (Anna Coutsooudisa 2001; WHO 2006).

Strategies for PMTCT

The WHO recommends a four pronged comprehensive strategy for PMTCT in women of reproductive age. This comprehensive and broad strategy incorporated the different prevention levels. The first is prevention of HIV infection among the mothers to be. The second is prevention of unintended pregnancies among HIV infected women. The third is prevention of peripartum transmission from infected women to their infants. The fourth is treatment, care and support of HIV infected women, their infants and their families (MHO/HAPCO 2007).

Of the aforementioned strategies the prevention of peripartum transmission of HIV is enjoying more popularity than the three prongs. For prevention of the peripartum transmission of HIV a package of services including HIV counselling and testing, provision of

prophylactic ARV drug given to women during the prepartum and intrapartum period and to babies during postpartum, safe delivery practice and infant feeding counselling are made available since the mid of 1990s (WHO/UNAIDS 2001; WHO 2004). Experience from developed countries showed that through early detection of HIV positive pregnant women, provision of prophylactic ARV drugs, appropriate delivery care and formula feeding the MTCT is in the verge of elimination (Foster and Lyall 2005) whereas it is still high in resource poor settings.

The opt-in approach for HIV counselling and testing

Counselling is a major and valuable strategy for the prevention of HIV. An opt-in HIV testing also referred as voluntary counselling and testing was first introduced in the mid 1980s (CDC 1985). The VCT was targeting the then risk groups and was offered on voluntary basis often in stand-alone sites and health facilities. The first VCT recommendation by the Centre for Disease Control (CDC) in 1985 for PMTCT was focusing on pregnant women at risk for HIV infection such as intravenous drug user, those with history of sexually transmitted infections, prostitutes and so on (CDC 1985). The VCT includes pretest counselling, testing and posttest counselling. Written consent to test was central in the recommendation to respect the women's rights and ensure informed decisions. Treating the women's HIV related information confidential is also of prime importance for the safety of the women (CDC 1985). Following medical advances on PMTCT, CDC revised the VCT recommendation in 1995. The amendment on the revised guideline was universal voluntary HIV testing for women attending antenatal care rather than focusing on risk groups. The women consent to undergo HIV testing after pretest counselling still required and voluntary women can opt-in (CDC 1995).

Features of an opt-out

- Often initiated by client
- Voluntary testing and women are requested to opt-in if they need the service
- Often requires written consent
- Structured individual pretest and post counselling

The opt-out approach for HIV counselling and testing

In 2001, the CDC guideline for HIV counselling and testing was revised again. The concept of mainstreaming HIV testing in routine perinatal care services and further expanding the testing offer during labour and delivery is included (CDC 2001). In the light of the CDC recommendation and the availability of safe, efficacious and cheaper prophylactic ARV drugs it became imperative to change the HIV testing strategy. The 2003 WHO publication entitled “THE RIGHT TO KNOW: New Approaches to HIV Testing and Counselling” has brought a major shift on HIV testing from an opt-in to an opt-out (WHO 2003b).

Following the recommendation, offering HIV testing for every woman attending antenatal care services has become part of a standard practice. Although, it is mainstreamed as part of routine antenatal care service the women’s right to refuse is still maintained. Botswana, one of the countries having the highest HIV prevalence in the world became the first in the sub-Saharan region to implement the opt-out HIV testing in 2004 (Creek, Ntumy et al. 2007).

Features of opt-out

- Offered in routine bases
- Testing is initiated by health care providers
- Women have the right to opt-out
- Written consent is not required
- Minimal pretest information often in group
- Individual posttest counselling

Prophylactic Antiretroviral for PMTCT

One of the first drug identified for PMTCT is Zidovudine (ZDV) from the class of ART called Nucleoside Reverse Transcriptase Inhibitors (NRTIs). NRTIs work by blocking the action of HIV enzyme called reverse transcriptase necessary for viral replication (Volmink, Siegfried et al. 2007). In the early 1990s, a multi site clinical trial was conducted in France and USA to assess the efficacy and safety of ZDV for PMTCT. ZDV was given to women from the 14 month of pregnancy and during delivery and to the infants for the first 6 week postpartum who were on formula feeding. ZDV was found efficacies to reduce the PMTCT

from 25% to 8%. This long course ZDV illuminated hope in the fight against perinatal transmission of HIV and recommendation was made to use ZDV for PMTCT (Edward M. Connor 1994). However, the cost and logistic needed for the implementation of the long course ZDV regime restricted its use in affluent areas of the world.

In 1999 a clinical trial named HIVNET 012 was conducted in Uganda to assess the efficacy and safety of short course NVP for PMTCT in breast fed infants (Guay, Musoke et al. 1999). NVP is from a class of ARV drugs called Non-Nucleoside Reverse Transcriptase Inhibitors (NNRTIs). NNRTIs works by preventing reverse transcriptase enzyme activity to translate viral RNA into DNA and thus stop HIV replication. The NNRTIs are the backbone of ARV treatment and are the first line ARV choice (Waters, John et al. 2007). In the HIVNET 012 trail, NVP single dose for mothers before labour and for infants within 72 hours of birth were given. The outcomes of this clinical trail showed a 47% reduction of MTCT among breast feeding infants (Guay, Musoke et al. 1999). This short course NVP has shown comparable efficacy with the short course ZDV with cost saving (Marseille, Kahn et al. 1999; Sax 1999), the regime is more simpler and associated with 18 months HIV free survival that make single dose NVP regime the choice of prophylactic regimen for PMTCT in resource poor settings (Guay, Musoke et al. 1999).

However, the safety of single dose NVP regimen has become a growing concern. The risk of viral resistance is higher whenever monotherapy is used, and NVP is identified to be more susceptible in this regard since a single point mutation can confer drug resistance (Waters, John et al. 2007). Development of resistance mutation may occur when the ARV drug failed to suppress viral replication fully and commonly associated with single dose NVP. To counteract the emergency of drug resistance mutation, an addition of short course nucleosides is indicated whenever monotherapy is used. Therefore, the 2006 WHO guideline recommend combination ART for PMTCT whenever feasible (WHO 2006).

The PMTCT guidelines and recommended prophylactic ARV for PMTCT

The new WHO revised guidelines on PMTCT recommends combination ARV drugs for PMTCT in light of reducing drug resistance (WHO 2006). The choice of ARV regime depends on the women condition and the timing of HIV testing as well as practical issue. Starting multiple prophylactics ARV drugs from 28 weeks of gestation and for one week

postpartum for the women and for the infants one week postpartum is the first line choice. However, in places where such regimes are not feasible single dose NVP to women and infant is still recommended (WHO 2006).

In Ethiopia a PMTCT guideline was first developed in 2001 before the launching of free PMTCT programs. The 2001 guideline encompasses the four pronged WHO recommended interventions with due attention on peripartum MTCT (MHO/HAPCO 2001). The guideline recommends VCT, single dose NVP regime for women during labour and for babies within 72 hours of birth in conjunction with counselling on safe delivery practice and infant feeding. Moreover, formula feeding as a first line choice was recommended for women who fulfil the AFASS criteria (Affordability, feasible acceptability, safe, and sustainable). But women who do not fulfil the AFASS criteria were advised exclusive breast feeding and abrupt secession at the age of six months (MHO/HAPCO 2001). Following the development of the PMTCT guideline the PMTCT service has been offered per the standard recommendation across the country using an opt-in approach through integration of VCT into the existing antenatal care services and women's consent is mandatory.

To expand access and sustainability of PMTCT services the national PMTCT guideline was revised in 2007 which incorporated recent scientific advances and recommendations (MHO/HAPCO 2007). The revised guideline advocate provider initiated opt-out testing for every woman seeking antenatal, delivery and postnatal care services. Moreover, multiple ARV drug prophylaxis regime, exclusive infant feeding for six months and complementary feeding until the age of 24 months as a first line infant feeding option are recommended.

Factors affecting PMTCT services provision and utilization

Various factors are affecting PMTCT service provision and utilization. Especially in poor resources settings both the health care system and the socio-cultural factors are shown to be barriers either for the service provision or utilization or for both (Temmerman, Quaghebeur et al. 2003). The enormous constraints within the health care system directly affect PMTCT services provision as well as utilization. These are lack of resources and poor integration of the PMTCT programs. To overcome these constraints different strategies has been tried out and some strategies are showing remarkable results in some places whereas the other do not.

Meanwhile, some of the major socio-cultural barriers to PMTCT service utilization are now improving as the women's knowledge of PMTCT increases.

Scarcity of resources for PMTCT implementation

PMTCT programs, policies and accompanying strategies are often developed by considering the minimum resources need for implementation. Evidences however, show that the resources required for the implementation of the PMTCT strategies are hardly in place in many resource poor settings (Delva, Draper et al. 2006). Most often the PMTCT programs are added and share the already constrained health care system and hence rarely achieve the intended objectives (Delva, Draper et al. 2006). In places where strategies are accompanied by the required inputs, the PMTCT service has been successfully implemented and remarkable prophylactic ARV utilization is being reported (Malyuta, Newell et al. 2006). Perfect policies and strategies without the minimum resources required for its implementation deemed unsuccessful.

Whenever resources are scarce the quality of service could suffer. Though, many factors are affecting the quality of care, some are more important than others. The public health care institutions in resource poor settings are suffering from weak infrastructures, poor staff profiles and poor management of existing resources (Painter, Diaby et al. 2004; Damen H. Mariam 2005). As a result the quality of health care services given to women is below the standard. Especially in this era of HIV/AIDS where, the required knowledge and expertise are highly dynamic it is continuing to be challenging to implement PMTCT programs.

Given the availability of PMTCT services in many areas in developing regions, the service utilization is low. Many public health care institutions are understaffed and the available staff lack the skills required to offer the PMTCT services (WHO/UNAIDS 2001; Kanshana and Simonds 2002; Cocu, Thorne et al. 2005). Brain drain is one of the greatest threats to public health institutions. There is an increasing inward and outward migration of skilled health professionals to more affluent areas which resulting in shortage of health professionals in public institution. The shortage of human resources are increasingly impacting the rollout of PMTCT programs (Perez, Orne-Gliemann et al. 2004; Delva, Draper et al. 2006). The ever increasing staff turnover and high mobility of trained staff are also affecting the already

established PMTCT programs. In order to keep the already established PMTCT programs alive appointing lay (peer) counsellors are considered appropriate and feasible in some areas (Doherty, McCoy et al. 2005).

Poor integration of the PMTCT programs

In resource poor settings the PMTCT programs are poorly integrated into the existing maternity care services although the PMTCT program implementation strategies are advocating full integration. The integration is meant to avoid missed opportunities and to ensure the availability and accessibility of PMTCT service for women seeking maternal care services (Askew and Berer 2003).

However, in many places the PMTCT services unlike the other antenatal care services are not considered basic. Such poor integration has been observed where the existing maternal services are not well developed and where the resources allocated for the programs are scarce. According to Malyuta and colleagues, a well developed maternal health services are pre-requisite for effective PMTCT programmes. In Ukraine for instance, where the maternal health services are well developed and well integrated the utilization of combination prophylactic ARV drugs for PMTCT were 97% (Malyuta, Newell et al. 2006).

Full integration of the PMTCT services entail offering PMTCT services routinely for every woman seeking antenatal care services (Chandisarewa, Stranix-Chibanda et al. 2007; Creek, Ntuny et al. 2007). The opt-out approach helps to overcome potential missed opportunities and stigma and should increase the proportion of women enrolled in PMTCT programs. In the opt-out approach the antenatal information and the testing are contained in a single service point. Consequently the number of staff involved, risk of disclosure, waiting time and risk of breach of confidentiality become reduced. In places where there is a high rate of antenatal attendance the opt-out HIV testing approach has showed remarkable result. Following the launching of the opt-out approach the percentage of women testing for HIV have increased. In Botswana and Zimbabwe the opt-out approach increased the proportion of women being tested from 76% to 95% and from 65% to 99% respectively. In many places now it is becoming a standard practice to

offer PMTCT services for every pregnant women coming for antenatal care services (Chandisarewa, Stranix-Chibanda et al. 2007; Creek, Ntummy et al. 2007).

Despite the increasing proportion of women being tested, unacceptably high level of loss to follow ups are reported in Malawi. About 68% of women who first enrolled in PMTCT were lost to follow up by the time of delivery (Manzi, Zachariah et al. 2005). There appeared to be a missing link between an increasing proportion of women being tested and utilization of prophylactic ARV drugs.

The socio-cultural factors affecting PMTCT service utilization

Among the many socio-cultural barriers affecting PMTCT service utilization the women knowledge of PMTCT, level of education and social relation such as partner involvement are found essential. Low educational status and lack of information about PMTCT is believed to hinder many pregnant women from seeking PMTCT services (Cocu, Thorne et al. 2005). However, the lack of awareness among pregnant women about PMTCT is improving both in urban and rural areas (Bajunirwe and Muzoora 2005).

Some women however, needed consent from their husband to take HIV testing suggesting the need for partner involvement in the PMTCT programs (Perez, Orne-Gliemann et al. 2004; Bajunirwe and Muzoora 2005; Karamagi, Tumwine et al. 2006). Male opposition, lack of male involvement and stigma are affecting the women's participation in PMTCT (Dabis, Newell et al. 2000). Gender power imbalance put many women in subordinate, dependent and passive position and incapacitates most women not to make independent decision to test without partner consent which in turn affect the PMTCT service utilization (Perez, Orne-Gliemann et al. 2004). Evidence suggested that HIV testing increases the women's vulnerability to violence especially among women who tested positive (Maman, Mbwambo et al. 2002; Rutenberg 2003). Involving men in PMTCT programs could helps to ensure their role in decision making and confer mutual understanding between couples.

Adherence to PMTCT recommendations

Adherence to ARV drugs, according to the WHO (WHO 2003a) be associated with characteristics of the regime, features of the individual patient, the patient-provider relationship and the health system. However, in order to attain the desired level of adherence, good counselling is imperative. Nurses are the prime counsellors in the health care institutions often because of their professional proximity to clients and of course their number in the health institutions (Bassett 2002). Studies report that various perceived and practical problems within the health institutions and between providers and clients possibly threaten adherence to a given counselling advice. Poor interaction between pregnant women and counsellor is detrimental for the utilization of PMTCT services in general (Painter, Diaby et al. 2004; Doherty, McCoy et al. 2005). Despite the NVP regimen being simple to be taken once, non adherence to the regime appears to be common. A comparison study of two strategies for administering NVP for PMTCT revealed that despite similar uptake of NVP between women on targeted strategy (NVP after being tested for HIV) and on universal strategy (NVP without testing for HIV), adherence was found to be different. Thirty nine percent of the women in the universal strategy were non adherent when checked for cord blood whereas 26% in the targeted strategy. Having low education appears to be strongly correlated with non adherence (Stringer, Sinkala et al. 2003).

CHAPTER 3 - SIGNIFICANCE OF THE STUDY AND STUDY OBJECTIVE

Significance of the study

Previous studies have reported various factors contributing to PMTCT service utilization in resource poor settings. Most studies are focusing either on issues related to antenatal counselling and testing or challenges surrounding infant feeding and infant feeding counselling (Anna Coutsooudisa 2001; Freddy Perez 2004). Probably because of the practical challenges to measure the impact of the PMTCT programs in terms of averted infection, often utilization of antenatal counselling and testing are used as a proxy for the success of PMTCT programs. For years poor utilization of prophylactic ARV drugs was masked by low test acceptance and efforts were made primarily to improve the test acceptance. Following the introduction of an opt-out approach significant progress in the rate of testing has been reported (Creek, Ntuny et al. 2007). Although NVP utilization is the most decisive step in the fight against MTCT that deserves the utmost attention, there is a dearth of studies on utilization of prophylactic ARV drugs in general. Moreover, changes in utilization of prophylactic ARV drugs in relation to the different testing approach employed are not explored, despite the intention of the shifting to opt-out in perinatal setting is being to improve prophylactic ARV drug utilization for PMTCT (Rennie and Behets 2006).

Therefore, it is important to conduct research to explore NVP utilization in general and the changes in NVP utilization following the introduction of an opt-out approach. Determinants of PMTCT service utilization have to be explored sufficiently to identify potential factors that favour or hinder the service utilization and ultimately to come up with appropriate recommendations to devise intervention strategies for the success of the PMTCT programs. Exploring the utilization of PMTCT service in general and NVP utilization in particular using triangulation of research methods and data sources from the users and providers perspective could give a more comprehensive understanding of the issue surrounding the service provision and utilization.

Objectives

General objective

To explore the determinants of PMTCT service utilization in Awassa town, Ethiopia

Specific objectives

- To assess utilization of PMTCT services among antenatal attendees in Awassa town
- To identify factors favouring PMTCT service utilization among antenatal attendees in Awassa town
- To assess the change in PMTCT service utilization after the introduction of the opt-out approach
- To explore barriers to PMTCT service utilization within the health care system

CHAPTER 4 - METHODS

A health institution based study was conducted from January to July 2006, and in September 2007. The study was designed as a triangulation using both quantitative and qualitative methods and included a survey among antenatal attendees, review of PMTCT registers, in-depth interviews with nurse/midwife counsellors, exit interviews with pregnant women and participant observation in the health centre where PMTCT service has been provided. The methods are spelt out in detail below.

The quantitative survey

Study design and sampling

A cross-sectional survey was conducted among pregnant women attending two antenatal clinics in Awassa town. The survey was conducted from January to July 2006 (for about 8 weeks the data collection was interrupted for social reason). Open Epi statistical software was used to calculate sample size based on the prevalence of PMTCT service utilization. Since the prevalence was not known, 50% prevalence estimate was assumed to get a maximum sample size of 384.

Collection of the survey data

The survey was conducted in two antenatal clinics namely Awassa Health Centre and Family Guidance Association in Awassa town. Women attending ANC in the two antenatal clinics during the study period were included unless they refused to participate. The data collection was carried out systematically in an alternating days and all women were asked to participate. In a week both antenatal clinics were visited alternatively, for instance if data were collected from Awassa Health Centre on Monday, Wednesday and Friday in the first week, then in the second week the data would be collected on Tuesday and Thursday and the same was true for Family Guidance Association.

A nurse field assistant collected all the data using structured pre-tested questionnaires. The questionnaires were developed in English while all the interviews were conducted in Amharic (the official language fluently spoken by all participants). The reason for not

translating the questionnaires before hand was because of practical reasons. However, to avoid inter-rater reliability only one field assistant was appointed to conduct the survey. To calibrate the field assistant and to minimize intra-rater variability half day training was given on how to phrase the questions and 30 pretest interviews were also done together with the principal investigator. Meanwhile, standardized questionnaire used elsewhere were adapted to assess the women awareness on MTCT/PMTCT. Except the socio-demographic questions, most of the questions in the questionnaire were structured with predefined responses (See annex -1). The questionnaire consisted of two major parts: (1) Demographic and obstetric characteristics (2) Awareness and perception on MTCT/PMTCT and Partner involvement in PMTCT. All the interviews were conducted in the maternity waiting area while the women were waiting for their turn. Those women who were not interviewed before antenatal check up would be interviewed afterwards when they finished the antenatal check up. First time antenatal attendees were also interviewed when they finished the antenatal check up because some of the questions required the women had to have at least one antenatal visit. The interviews were estimated to take 10 to 15 minutes.

Analysis of the survey data

All statistical analyses were carried out using SPSS statistical package, version 15 for windows. The analyses included: descriptive statistics, Chi square tests, odds ratio and logistic regression. Median and range are used to describe some of the socio-demographic and obstetric characteristics. The Chi square tests were used to compare the socio-demographic and obstetric characteristics. Logistic regression analyses were conducted to identify determinants for VCT and PMTCT service utilization.

Most continuous variables (education and age), categorical variables (marital status, religion and women's working place) and ordinal variable (gravidity and parity) were dichotomized for logistic regression analysis after preliminary description. The women's age was divided into two groups, i.e less than 25 years and greater than or equal to 25 years. Accordingly women/husbands educational attainment was grouped into less than or equal to 7th grade and 8th grade and above. Husbands' educational attainment was obtained from interviews with the women. Marital status was divided into two groups; the married group included women living with husband while the single group included women who were not in marital relationship

during the survey (never married, divorced and widowed). According to working place women were grouped under housewives if they had no work outside of home otherwise working outside of home (student, employed and self employed women). Religion of the women was divided into Christian and Muslim. Based on the areas' of residence women were divided into either urban resident or rural resident. Women with first time pregnancy was grouped under primigravida otherwise, multigravida.

The family monthly income was treated differently as it demanded extrapolation and different categorization. The women were categorized under three socioeconomic groups based on women self report of family monthly income. To make categorization of the family monthly income an online resource from International Livestock Research Institute (ILRI) website http://www.ilri.org/InfoServ/Webpub/Fulldocs/WorkP31/thedata.htm#P14_10 was used because of its similarity with this study. The intervals were 50 to 200 Eth. Birr (EthB) to group under low income, 201 to 500 EthB to group under middle income and 501 EthB and above to group under high income in that survey. However, because of the significant changes in monthly income, living costs, labour cost and expenditure it was impossible to refer the article directly. In order to make appropriate extrapolation the currency changes was chosen to be a proxy indicator. The currency in 2006, 1 USD was about 9 EthB and in 1992/93, 1 USD was about 5.5 ETB and the ratio is 1.64. Then to calculate the income interval, the lower/upper limits of the group in that survey was multiplied by a factor of 1.64. Hence, women who reported to have a monthly income of less than or equal to 328 EthB per month were grouped under low income, those reported to have a monthly income of greater than 328 EthB and less than or equal to 820 EthB per month were grouped under middle income and the rest who reported to have a monthly income greater than 820 EthB were grouped under high income.

Logistic regression

Logistic regression analysis was done to assess determinants of ever use of VCT in non antenatal setting and utilization of PMTCT services. Bivariate analyses were first done and variables with P-value less than 0.2 in the bivariate analysis were included for adjustment in the multivariate model. We also calculated the 95% confidence interval of the odds ratio.

Review of the PMTCT registers

As part of the actual data collection, the 2005/6 and the 2006/7 PMTCT registers in Awassa Health Centre were examined in September 2007. There were two registers dedicated for PMTCT registration, the antenatal PMTCT registration and the PMTCT labour/delivery registration and ARV infant log. These registers were used to register pregnant women enrolled in the PMTCT program. Positive pregnant women referred for NVP and infant feeding counselling were also registered. The referral could be from different antenatal clinics, VCT centres or support organizations. The registration was anonymous (use code number). All pregnant women were supposed to bring their code number from the VCT centre where they got tested. The antenatal PMTCT register contains information on the date of enrolment, confidentiality number, age, gestational age, partner notification as well as information about NVP collection. Meanwhile, the PMTCT labour/delivery registration and ARV infant log contains all the information which is found in the antenatal PMTCT register and in addition it contains information regarding place of delivery, ARV prophylaxis for the baby, episiotomy, and artificial rupture of membrane, feeding decision and child status on discharge. Moreover, the antenatal registers were also reviewed. Review of all the registers was done by the principal investigator. Proportion and percentages were calculated to describe the data obtained from the registers.

The qualitative methods

A qualitative inquiry with an inductive descriptive approach was opted to explore issues and challenges in PMTCT services utilization. The qualitative part of the study triangulated different methods of data collection to get a holistic view and to optimize the credibility of the findings. According to Patton triangulation of data sources could help to reduce biases and help comparing and crosschecking the consistency of gathered information (Patton 2002). Three qualitative data collection methods, namely in-depth interview, exit interview and participant observation, were used to grasp the varied perspectives on VCT and PMTCT services provision and utilization as well as to optimize credibility. The data collected in this manner will be near comprehensive as the methods employed complement each other's shortfalls. The data were collected from all health institutions rendering PMTCT, VCT services and HIV counselling in Awassa town, from January to July 2006.

Participant observation

The participant observation was conducted in Awassa Health Centre to assess the provision and utilization of PMTCT services. According to Polit, there are three levels of observations during field work, these are descriptive, focused and selective (Polit 2004). For this research descriptive and focused observations were of paramount importance to uncover the complex, hierarchical and lengthy organization of the Awassa PMTCT centre. In the beginning during the period of familiarization the observation was descriptive. When I had become familiar with the setting I started to focus the observation on the phenomena encompassing the PMTCT service provision and utilization.

Parahoo described the four kinds of unstructured observation as a continuum. The complete observer at one end of the continuum and the complete participant at the other end (Parahoo 1997). In the continuum the researcher can assume a role either as participant-as-observer or observer-as-participant. Initially my observation was more of participant-as-observer thus I was reserved from engaging in any of the activities. As I became acquainted with the staff, I assumed an active role of observer-as-participant. The observation was overt and I established good relationship with staff working in the maternal health areas including PMTCT. The observation yielded important information about the organization and functioning of Awassa PMTCT centre.

The qualitative interviews

Recruitment of informants

Purposeful sampling technique was used to select informants for the in-depth and exit interviews. Three criteria's were used to select informants for the in-depth interviews. These were professional background (either nursing or midwifery), training either on VCT/PMTCT or both and counselling experience. The counsellors were recruited from all counselling centres in Awassa town. The exit interviews with women in the PMTCT program were conducted in Awassa Health Centre. Pregnant women who underwent HIV testing for PMTCT during the data collection period were interviewed. These informants were identified and referred by the nurse or midwife working in the antenatal room when they finished the posttest registration.

Interview guides

For the in-depth interviews and the exit interviews prepared interview guides were used. The guides were developed in English and translated into Amharic (the official language) before the interviews. (See annex -2 and 3). The interview guides contained an outline of the major issues to be explored and were also used as a checklist to make sure that the relevant topics were covered. The interview guides were developed in the form of open ended questions to reduce imposition of predetermined responses and to allow informants to think aloud and to express their experiences. Questions in the interview guides were arranged in a way to facilitate dialogue. The first part contained general questions followed by more specific questions and in the end more sensitive questions but merely focusing on experiences and challenges to provision/utilization of PMTCT services.

The in-depth and exit interviews

Both the in-depth and the exit interviews were conducted in health institutions. As being experienced in qualitative data collection I conducted all the qualitative interviews. Patton described that "the researcher is the instrument" for qualitative data collection (Patton 2002 pp. 14). Before each interview I introduced my self and gave information about the objective of the study and asked their consent to participate. The interviews were conducted in Amharic (the national language spoken fluently by all informants and the interviewer) and notes were taken by the fact that according to the local context people would not be openly share their information if they were asked to be taped. To facilitate the verbatim note taking the interviewees were requested to speak slowly so that I could managed to write as much as what they have said. While interviewing I would ask them to repeat what they have said at times they spoke too fast. Although I would not deny the difficulties to command my attention on the discussion, if not the interview guides I would have trouble to guide the interview.

Neutrality was maintained during the interviews which mean no signs were used to approve or disapprove the content of the informants' responses. Follow up questions (probes) were found fundamental to explore the interviewee response in-depth. A combination of non verbal and verbal cues was used during the dialogue. The non verbal cues were used to encourage the interviewee and they were supplemented by some words to keep on the dialogue. Words

like “eh”... “eh” don’t have meanings by themselves but found useful to keep the dialogue alive.

The actual dialogue was initiated by asking a more general question. The subsequent dialogue was based on the answers obtained. The interview guides were used to re-direct the dialogue. Owing to a high trust level, much information was revealed through probing. Actually, the interviewees were allowed to think aloud to go back and forth during the interviews. In the final portion of the dialogue the interviewees were allowed to add or comment on whatever they think regarding PMTCT service provision or utilization.

In-depth interviews

The in-depth interviews with counsellors were conducted in natural settings, which was in the informants’ respective work places. For conducting the interviews counsellors were asked appointments the first time I visited the centre. Ten of the interviewees were found willing and free to be interviewed the same day I visited the centre while the rest were interviewed with appointments. A kind of follow up interviews was conducted with 10 counsellors since the note taking were demanding more time to finish the interviews. In general the interviews’ lasted from 46 minutes to 156 minutes. Before each interview, for a brief moment I was spontaneously talking about events that happened in that particular time and/or about nursing. The nursing fraternity helped to build up trust with the counsellors since we all share same nursing background. In the end of the interviews the counsellors were asked some personal (private) HIV related question (eg, have you ever tested for HIV?) while they were informed to opt-out if they feel uncomfortable. In fact none of the informant’s opted out of the personal questions.

Exit interviews

Prior to each exit interview to open up a dialogue I often used simple phrases or jokes to make the women comfortable. In the first part of the interviews women were asked some demographic information followed by questions on their experience in counselling. For subsequent dialogue I used the interview guide. The interviews lasted for 17 to 36 minutes.

The researcher position

I (the principal investigator) am a nurse tutor and used to work in a university in Awassa town. I did the field work while I was working in the university full time. My nursing background and prior acquaintance with many of the institutions eased the process to get study permit from each institutions. I assumed three distinct roles during data collection, a supervisory role during the quantitative data collection whereas a role of data collector and a tool for collecting the qualitative data. I knew most of the counsellors before the field work when I took students for practical attachment in their respective work places. All the counsellors approached volunteered to be interviewed. During the interviews it was not difficult to open up the dialogue and the counsellors did not seem intimidated. The interviews went well with all the counsellors and I have obtained more information than expected I believe the nursing fraternity helped a lot to gain the counsellors confidence. I felt that I was somehow connected with the counsellors when they expressed their experience without reservation including their private HIV related information as well as family secrets and I feel that they were also assuming a circle of confidentiality among nurses.

However, our prior knowledge of one another might have influenced the counsellors not to opt-out of the in-depth interviews or could have caused social desirability bias. Owing to the lack of pre understanding of counselling in general and VCT and PMTCT in particular I was somehow having an outsider perspective both during data collection and analysis.

Moreover, sharing common background with the nurses and nurse midwives also facilitated the exit interviews. I would not have got 21 women for the exit interview without the counsellors' cooperation. The counsellors were referring women for the exit interviews when the posttest counselling was over. During the exit interview I explicitly told my professional background and my working place to all exit interview informants. That could have caused social desirability bias but I believe that the questions in the interview guides might not give a room for such answers. Even some of the informants did not consider me as part of the health system and were gossiping with me about the challenges they faced.

Qualitative data analysis

Data analyses started concurrent with data collection (Pope, Ziebland et al. 2000; Patton 2002; Polit 2004). After each interview the notes were scrutinized for missing information and deficiencies and further clarifications were asked during subsequent interviews regarding the newly emerging themes before leaving the field. Prior to the actual data analysis the interview data's were translated into English. As a native speaker of the Amharic language I did the translation myself. I would not however deny the fact that there were problems in finding a direct translation into English for some words and expressions, yet I tried to translate as much as possible. Doing the translation was an opportunity to immerse into the data and to get a holistic understanding of the material.

According to Pope, et al, the initial steps of a qualitative data analysis is to manage and make sense of the huge material (Pope 2000). The initial step was reading and re-reading the notes taken during the interviews and the participant observation to get an overall impression of the material. The second step was identifying recurring themes. The interview guides were found instrumental to make preliminary labelling of the themes. The third step was reading and re-reading again then cutting relevant texts and pasting under the respective themes. The fourth step was thorough reading of the texts under each theme followed by cutting out non relevant texts. Coming back and forth was common throughout the analysis process. The analysis was first inductive then followed by deductive analysis. While doing the inductive analysis some sensitizing concepts such as confidentiality, disclosure, information on PMTCT, service organization, the decision to test, missed opportunities were used. According to Patton, “ a sensitizing concept is a starting point in thinking about the class of data of which the social researcher has no definite idea and provides an initial guide to her research” (Patton 2002 pp. 278).

The deductive analysis was guided by the quantitative findings as the quantitative and the qualitative data's were complementary. The quantitative findings showed poor utilization of PMTCT services. The deductive analysis was then directed towards identifying barriers to PMTCT service utilization. Accordingly three major categories were identified. The data from the in-depth interviews, exit interviews and participant observation were examined across and consistencies were crosschecked in each step of the analysis process.

Ethical considerations

Ethical clearance was obtained from Debub University, College of Health Sciences and Southern Region Health SNNPR Health Bureau. The Southern Region Health SNNPR Health Bureau gave permission and wrote a letter to Sidama Zone Health SNNPR Health Bureau, Awassa Woreda Health SNNPR Health Bureau and to respective health institutions. Then, study permit was granted from each health institution in accordance with the letter from the Regional Health SNNPR Health Bureau. Verbal consent was asked from each informant prior to the interviews. There were two major reasons for inquiring verbal consent over written consent. First according to the local context people are sceptic when they asked their signature and either they would not participate or could not be open during the interviews. The second reason was if written consent was inquired anonymity could not be maintained and concern about breach of confidentiality could affect the interviews.

Hence, data were collected anonymously to ensure confidentiality. Informants were assured that the data will be handled exclusively by the investigators and no one will be able to recognize them in the report. They were also informed that the interview data will be destroyed when the study is reported (See annex-4). To minimize inconveniences the in-depth interviews were conducted according to the informant's schedule. Meanwhile, to avoid a sense of intimidation I tried to establish friendly atmosphere prior to the interviews' and participation to the study was of course voluntary.

There were some challenges to interview women after they finished the PMTCT process since they would spend long hours to get the service. With the counsellors we have made some arrangement to shorten the waiting time. These were giving priority and doing both the posttest registration and exit interviews together. Interviewing women with HIV positive result did not prove to be challenging as anticipated before the data collection. The two HIV positive pregnant women interviewed in the study were not different from others to talk to. In fact one of the women was in a difficult situation as she got the test result off working hour and there was no one in the antenatal room to talk to her at that moment. She was not sure where to go and what to do next and I believe my presence made a difference in that she could share her worries with me.

CHAPTER 5 - FINDINGS

The quantitative findings:- Utilization of PMTCT services

A total of 385 pregnant women attending antenatal care in Awassa town were approached and 383 participated in the questionnaire interviews. Of which 377 women completed the interviews. Of the 377 women over 95% were living in Awassa town and 69.8% (263/377) of the women were attending ANC in Awassa Health Centre, while 30.2% (114/377) were attending ANC in Family Guidance Association (FGA). They were between 15 to 40 years of age (median 22 years). Over 90% (349/377) of the women were Christian and 7.4% (28/377) were Muslim by religion. Most of the women were married and living with their husband, except 2.4% (9/377) who were not in marital relationship during the survey. Two hundred and twenty eight (60.5%) of the women were housewives while 14% owned small scale business and the rest reported that they were working outside of home. In general women were reported to have lower education than their corresponding husbands' (mean grade 7th Vs 10th). The education of women was found significantly associated with their place of work where more women with lower education (0 to 7th grade) found to be housewives (72.1% Vs 51% p= 0.001). (See table -2)

Great variation in family monthly income was observed among the 275 women who responded to this item, from 70 to 4 000 Ethiopian Birr (EthB). The income distribution (regardless of the non responses) was grouped in three categories. The majority (43.6%) of the women were having middle income (328-820 EthB) while 28.6 % had high income (\geq 820 EthB) and 27.8% had low income (\leq 328 EthB). Of the 27.6% (104) women, 63 were housewives, 25 petty traders, 6 were housemaids, 4 were government employee and 6 were from other category.

The obstetric profile of the participant reflected that 52.8% (199/377) were pregnant for the first time (Primigravida) (Median of 1 pregnancy). About 20% of the women had visited other antenatal clinic during that pregnancy yet for 39% (147/377) of the women it was their first visit for antenatal check up. Of the multigravida women, 55.6% (99/178) had given birth once (Primipara), and 52.8% (94/178) delivered their last child at health institutions. (See table -2).

Table 2- Background characteristics of the surveyed women

Characteristics		Frequency	%	Median and/or Range
ANC site	Awassa Health Centre	263	69,8	
	Family Guidance Association	114	30,2	
Residence	Urban	362	96,0	
	Rural	15	4,0	
Marital status	Single (never married/divorced/widow)	9	2,4	
	Married	368	97,6	
Religion	Muslim	28	7,4	
	Christian	349	92,6	
Age	15 to 19 years	87	23,2	Median= 22 Years Range= 25 Years (15 to 40)
	20 to 24 years	142	37,9	
	25 to 29 years	111	29,6	
	30 years and above	35	9,3	
Women place of work	Government employee	46	12,2	
	Petty trader	54	14,3	
	Housewife	228	60,5	
	Housemaid	11	2,9	
	Others	38	10,1	
Women education	No formal schooling	33	8,8	Median= 8 th Grade
	Grade 1 to 4	79	21,0	
	Grade 5 to 8	106	28,1	
	Grade 9 to 10	67	17,8	
	Above 10 th grade	92	24,4	
Husband education	No formal schooling	9	2,4	Median=10 th Grade
	Grade 1 to 4	28	7,4	
	Grade 5 to 8	100	26,5	
	Grade 9 to 10	46	12,2	
	Above 10 th grade	194	51,5	
Family income	Low income (\leq 328 EthB)	76	20,2	Median= 600 EThB Range= 70 to 4 000
	Middle income (328-820 EthB)	119	31,6	
	High income (\geq 820 EthB)	78	20,7	
	No response	104	27,6	
Number of antenatal visit	First visit	147	39,0	
	More than one visits	230	61,0	
Gravidity	Primigravida	199	52,8	Median= 1 Child
	Multigravida	178	47,2	
Place of delivery of the last child	Home	82	46,6	
	Health institutions	94	53,4	

The women's awareness of MTCT/PMTCT

The result shows that 95.5% (360/377) of the women knew about MTCT of whom 91.7% (330/360) knew that MTCT can be prevented. From the women who knew about MTCT, 65% (234/360) were aware of the fact that MTCT can occur during pregnancy, 74.4% (268/360) during labour and delivery and 91.9% (331/360) through breast feeding. Among the women who knew about PMTCT, 73.3% (242/330) were aware of the availability of prophylactic ARV drugs, 82.4% (272/330) avoiding breast feeding to prevent MTCT, 57.9% (191/330) knew that safe delivery practice can prevent MTCT.

Factors associated with PMTCT service utilization

The survey result shows that 9.8% (37/377) of the women had ever utilized PMTCT services. During the current pregnancy 38.7% (146/377) women were pretest counselled on PMTCT in antenatal clinics and 24% (35/146) of them utilized the PMTCT services.

In the bivariate analysis, PMTCT service utilization was found to be significantly associated with six variables. These are being attending antenatal care in Awassa Health Centre (OR 3.0, 95% CI 1.1-7.9), being a housewife (OR 1.9, 95% CI 0.9-4.0), women having more than 1 antenatal visits (OR 2.5, 95% CI 1.1-5.6), having awareness on the availability of NVP for PMTCT (OR 4.3, 95% CI 1.5-12.5), having discussion about HIV testing with husband (OR 2.3, 95% CI 0.9-5.7) and husband ever been tested for HIV (OR 2.1, 95% CI 1.0-4.4).

Adjusting for variables with P-value less than 0.2 by entering in multiple regression model, PMTCT service utilization were found to be independently associated with three variables. Women attending antenatal care in Awassa Health Centre were over four times more likely to use PMTCT service than those women attending antenatal care in Family Guidance association (OR 4.6, 95% CI 1.7-12.5). Women who were aware of the availability of prophylactic ARV for PMTCT were also over 4 times more likely to use PMTCT services than those who were unaware (OR 4.3, 95% CI 1.4-12.8). Women who had more than one antenatal visits were two times more likely to use PMTCT services than those who have only one visit (OR 2.1, 95% CI 0.9-5.1). (See table -3).

Table 3 - Logistic regression of factors influencing PMTCT service utilization among 377 women attending antenatal care in Awassa town

Variable	Ever used PMTCT services		Unadjusted OR (95% CI)	Adjusted n= 359 OR (95% CI)
	No n (%)	Yes n (%)		
ANC site				
• Family Guidance Association	109(95.6)	5(4.4)	1	
• Awassa Health Centre	231(87.8)	32(12.2)	3.0(1.1-7.9)	4.6(1.7-12.5)
Age				
• 15 to 24years	209 (90.5)	22(9.5)	1	
• \geq 25 years	131(89.7)	15(10.3)	1.1(0.5-2.2)	1.4(0.7-2.9)
Women place of work				
• Outside of home	139(93.3)	10(6.7)	1	
• Housewife	201(88.2)	27(11.8)	1.9(0.9-4.0)	1.7(0.8-3.9)
Women education				
• \leq 7th grade	161(91.0)	16(9.0)	1	
• \geq 8th grade	179(89.5)	21(10.5)	1.2(0.6-2.3)	1.1(0.5-2.3)
**Husband education				
• \leq 7th grade	81(90.0)	9(10.0)	1	
• \geq 8th grade	246(91.1)	24(8.9)	0.9(0.4-1.9)	0.7(0.3-1.9)
Number of pregnancy				
• Multigravida	163(91.6)	15(8.4)	1	
• Primigravida	177(88.9)	22(11.1)	1.4(0.7-2.7)	1.2(0.6-2.6)
**Family monthly income				
• Low income	68(89.5)	8(10.5)	1	
• Middle income	103(86.6)	16(13.4)	1.3(0.5-3.2)	
• High income	73(93.6)	5(6.4)	0.6(0.2-1.9)	
No of antenatal visit				
• First visit	139(94.6)	8(5.4)	1	
• More than one	201(87.4)	29(12.6)	2.5(1.1-5.6)	2.1(0.9-5.1)
Husband ever tested for HIV				
• No	161(93.6)	11(6.4)	1	
• Yes	179(87.3)	26(12.7)	2.1(1.0-4.4)	1.4(0.6-3.1)
Discussing HIV testing with husband				
• No	105(94.6)	6(5.4)	1	
• Yes	235(88.3)	31(11.7)	2.3(0.9-5.7)	1.9(0.7-5.2)
Aware of the availability of NVP for PMTCT				
• No	117(96.7)	4(3.3)	1	
• Yes	223(87.1)	33(12.9)	4.3(1.5-12.5)	4.3(1.4-12.8)

** Because of the non responses the total number of women were less than 377

Factors associated with utilization of VCT in non antenatal setting

Of the 377 participants who completed the survey, 340 women had never utilized PMTCT services. Of the 340 women 49.4% (168/340) had ever utilized VCT services in non antenatal setting. Of whom 69.1% reported their prior discussion with their husbands to undergo HIV testing. According to the women's self report over 50% (205/377) of the respective husbands' were found tested for HIV. Among the 177 primigravida women who had never utilized the PMTCT services, 59.3% (105/177) of them had utilized VCT services in non antenatal settings.

In the unadjusted odds ratio utilization of VCT in non antenatal settings were found to be significantly associated with six variables. These are being attended in Family Guidance Association (OR 2.1, 95% CI 1.3-3.3), women having above 7th grade of schooling (OR 2.7, 95% CI 1.7-4.2), having a husband with 7th grade and above schooling (OR 3.0, 95% CI 1.7-5.1), being primigravida (OR 2.3, 95% CI 1.5-3.6), husband's being ever tested for HIV (OR 37.1, 95% CI 20.0-68.9) and having discussion with husband about HIV testing (OR 13.7, 95% CI 7.2-26.0). Adjusting for variables with P-value less than 0.2 by entering in multiple regression model, utilization of VCT in non antenatal setting were independently associated with having discussion with husband about HIV testing (OR 8.5, 95% CI 3.3-21.9) and having a husband ever tested for HIV (OR 28.1, 95% CI 13.8-57.4). (See table-4)

Table 4 - Factors associated with VCT utilization among 340 women tested in non antenatal setting

Variables	Ever tested for HIV		Unadjusted OR (95% CI)	Adjusted OR (95% CI) n=327
	No n (%)	Yes n (%)		
ANC				
• Awassa Health Center	130(56.3)	101(43.7)	1	
• Family Guidance Association	42(38.5)	67(61.5)	2.1(1.3-3.3)	1.4(0.6-3.0)
Age				
• 15 to 24 years	108(51.7)	101(48.3)	1	
• ≥25 years	64(48.8)	67(51.2)	1.1(0.7-1.7)	1.0(0.4-2.4)
Religion				
• Christian	163(51.6)	152(48.2)	1	2.6(0.6-11)
• Muslim	9(36.0)	16(64.0)	1.9(0.8-4.4)	
Women education				
• ≤ 7 th grade	102(63.4)	59(36.6)	1	
• ≥8 th grade	70(39.1)	109(60.9)	2.7(1.7-4.2)	1.1(0.5-2.5)
**Husbands' education				
• ≤ 7 th grade	57(70.4)	24(29.6)	1	
• ≥8 th grade	109(44.3)	137(55.7)	3.0(1.7-5.1)	1.8(0.7-4.5)
Women place of work				
• Housewives	108(53.7)	93(46.3)	1	
• Working outside of home	64(46.0)	75(54.0)	1.4(0.9-2.1)	1.4(0.7-3.0)
** Family monthly income				
• Low income	33(48.5)	35(51.5)	1	
• Middle income	47(45.6)	56(54.4)	1.1(0.6-2.0)	
• High income	37(50.7)	36(49.3)	0.9(0.5-1.8)	
Number of pregnancies				
• Multigravida	100(61.4)	63(38.6)	1	
• Primigravida	72(40.7)	105(59.3)	2.3(1.5-3.6)	1.3(0.6-3.0)
Husband ever tested for HIV				
• No	142(88.2)	19(11.8)	1	
• Yes	30(16.8)	149(83.2)	37.1(20.0-68.9)	28.5(13.8-58.7)
Discuss HIV testing with husband				
• No	92(87.6)	13(12.4)	1	
• Yes	80(34.0)	155(66.0)	13.7(7.2-26.0)	8.5(3.3-22.0)

** Due to the non responses the total number of women were less than 340

PMTCT services utilization in Awassa Health Centre before and after introduction of an opt-out approach

The PMTCT registers in Awassa Health Centre were reviewed to assess the changes in PMTCT service utilization before and after the introduction of an opt-out approach. Data's for the months of October, November and January were found incomplete in 2005/6 and hence excluded from analysis. For comparison reason same months were excluded from analysis also in 2006/7. According to the nine months data from PMTCT registers, many women did not get the opportunity for pretest counselling while some women became dropouts after pretest counselling both before and after the introduction of an opt-out approach. The table below shows the PMTCT service utilization before and after the introduction of an opt-out approach. (See table - 5).

Table 5 - Comparison of PMTCT services utilization in Awassa Health Centre

	Opt-in approach		Opt-out approach	
	2005/6		2006/7	
	n	%	n	%
New ANC attendees	1949		1677	
Women who got pretest counselling	190	9.7	652	38.9
Tested for HIV from the New ANC attendees	157	8.0	644	38.4
Tested for HIV from pretest counselled	157	82.6	644	98.8
Posttest counselled and collected test result	157	100	640	99.4
Tested positive	27	17.2	30	4.7
Women who received NVP	26	96.3	25	83.3
Babies who received NVP	24	88.9	8	26.7

As shown in table 5, 9.7% (190/1949) and 38.9% (652/1677) of pregnant women who visited Awassa Health Centre got pretest counselling before and after the opt-out approach.

Although utilization of pretest counselling appeared to be low in general, there was some improvement following the introduction of the opt-out approach. During the opt-in approach the test acceptance was 82.6% whereas 98.8% of women were tested during the opt-out approach among the pretest counselled. The utilization of posttest counselling and collection of test result remained consistently high before and after the introduction of an opt-out approach. The HIV sero-prevalence was higher during the opt-in approach but the numbers

of women tested positive were similar i.e 27 during the opt-in approach and 30 during the opt-out approach. (See table -5).

In contrast with the increased number of women who tested, the NVP utilization by the women and babies was found lower in 2006/7 compared to the year before. When the service was offered in an opt-in approach all the positive women except one (26/27) had collected their NVP, while more women became dropouts during the opt-out approach. An exaggerated gap was apparent when it comes to NVP utilization by babies before and after the introduction of an opt-out approach. Only 8 of the 30 babies received NVP during the opt-out approach compared to 24 of the 27 babies who received NVP during the opt-in approach. (See table-5).

Similarly, more mother-infant pairs (24/27) received NVP when the test was offered in an opt-in approach than during the opt-out approach (8/30). In order to translate this number into possible averted infections by the PMTCT program we did the following calculation. According to Guay et al., only one third of HIV positive women can transmit the virus to their babies (range 20% to 45%) among breast feeding population (Guay, Musoke et al. 1999). Furthermore, a single dose of NVP given to women and babies can reduce the transmission by 41%. Therefore, among the 24 positive mothers only 8 of them could transmit the virus during the opt-in approach and 3 of 8 positive women could transmit the virus during the opt-out approach. When the 8 mother-infant pairs were assumed to have taken their NVP during the opt-in approach and the 3 mother-infant pairs during the opt-out approach, the potential averted infection could be 3 during the opt-in approach whereas 1 during the opt-out approach (See table -5).

The qualitative research findings:- Barriers to PMTCT service utilization

A total of nineteen counsellors; twelve women and seven men were interviewed. All the counsellors had nursing background and three of them were nurse midwives'. All the midwife counsellors had PMTCT training while the nurse counsellors had training on VCT only. They were between 25 to 47 years of age. Thirteen counsellors were married and six were never married. Most of the informants had ample experiences in nursing ranging from 4 years to 27 years (mean 13 years). However, the maximum counselling experience was four years (7/12 to 4 years).

Twenty-one pregnant women, all living in Awassa town participated in the exit interviews irrespective of their HIV status. All except one were married and were in the age range between 18 to 30 years. Three of the pregnant women were illiterate while the rest had some schooling (range 0 to 12 grades). Twelve of the women were primigravidas.

In the quantitative section, utilization of PMTCT service in general and a comparison of PMTCT service utilization before and after the introduction of an opt-out HIV testing in particular was described. The results showed that only 9.8% of the surveyed women ever utilized PMTCT service. However, following the introduction of an opt-out HIV testing strategy considerable improvement in HIV test occurred, but this increase was not reflected in NVP utilization by the women and babies. Quite on the contrary the data showed that NVP utilisation dropped after the introduction of the opt-out strategy. The problem is probably connected to issues both within and outside the health care system. In the following report of the qualitative data, issues that may serve as barriers within the health care system and the PMTCT programme itself are focused upon. Although the qualitative data were collected before the introduction of an opt-out HIV testing approach and hence should primarily be used to discuss the general problem of underutilisation of PMTCT services at Awassa Health Centre, they may also throw some light on the observed discrepancies in the service utilization before and after the launching of the opt-out approach.

Through the analysis of the data collected through the in-depth interviews with counsellors, the exit interviews with the pregnant women and the participant observation in the clinic, three categories of particular relevance for PMTCT service utilization were identified. These

were: missed opportunities for pretest information, characteristics of the organization of the PMTCT services and the testing situation.

The missed opportunities

According to the PMTCT registers, the major reason for poor utilization of PMTCT services was the lack of pretest information for pregnant women. Despite the availability of a PMTCT program in the health centre 91.3% and of women did not get pretest counselling during the opt-in approach. Similarly 61.3% of the surveyed women in the two antenatal clinics in Awassa town never offered with pretest counselling. Barriers to pretest counselling were found within the health care system and seemed to be associated with the lack of resources (such as manpower shortage, workload and space and time constraints), perceived lack of competence among VCT counsellors' to offer PMTCT counselling and lack of commitment by PMTCT counsellors to offer PMTCT services.

The lack of resources to offer PMTCT services

From the interviews and participant observation we have noted that Awassa Health Centre did not have sufficient resources for the PMTCT program. There were manpower, time and space constraints to offer the PMTCT services. In 2005, when the PMTCT program was first launched very limited resources were allocated. Two midwives, one working in the antenatal clinic and the other working the delivery ward got training on PMTCT. The VCT clinic operating in the health centre long before the launching of the PMTCT program was considered to be a resource for the new PMTCT program. But even the VCT counsellor working there did not get training on PMTCT counselling. One year after the launching of the PMTCT program there was a lot of frustrations among the counsellors. When they were asked about the major problems in PMTCT counselling, one counsellor explained:

“We have manpower shortage, lack of convenient room for counselling, and shortage of material. There is nothing to support the PMTCT program in the health centre. I can not say the program has started. We are trained to do so but we are not working properly”.

The counsellors indicated that the PMTCT program was launched in response to the national scale up plan without adequate preparation by the health centre. Although the national

PMTCT guidelines states full integration of PMTCT program into existing reproductive health programs, the PMTCT services were not considered as one of the basic and necessary services and thus were never prioritized like other maternity care services in Awassa Health Centre. The PMTCT counsellors argued that because of the huge practical challenges related to workload, shortage of staff, and time constraints they were not able to offer PMTCT counselling that they were trained to give. As one of the PMTCT counsellors said;

“I don’t feel prepared for PMTCT counselling. Actually I have taken the PMTCT training, but because of the practical problems and shortage of manpower we are forced to work in different places within the health centre. There is no sufficient manpower in the antenatal clinic only one person is assigned at a time. But there are so many things to be done for pregnant women. I don’t have time to talk about PMTCT and it needs more service time to talk to each woman...”

Perceived lack of competence among VCT counsellors for PMTCT counselling

The counsellors assigned to VCT centres were only trained for VCT, but they were also supposed to offer PMTCT counselling whenever they encountered with pregnant women. Almost all the VCT counsellors, in fact, perceived that they had no competence to offer PMTCT counselling because of the lack of training on PMTCT. These VCT counsellors perceived the PMTCT counselling to be a specialization that requires special training. They were reluctant and did not consider themselves to be responsible to offer PMTCT counselling. A VCT counsellor working in one of the non governmental health institution said that:

“I have no training on PMTCT so that I may not cover the full scope of PMTCT counselling ...PMTCT counselling should be done by midwives”

Another VCT counsellors working in another non governmental health institution was very clear about the division of labour between PMTCT and VCT and said that:

“Giving information on PMTCT is not my job. There are people trained to do so and these people tell the women in detail. What I can do is refer positive women to PMTCT centre”

Poor commitment of PMTCT counsellors to offer the PMTCT service

The PMTCT trained midwives also confirmed that they were not offering the PMTCT services properly although they had the competence. According to a PMTCT counsellor working in Awassa Health Centre, the reason for not offering PMTCT counselling was lack of commitment. The counsellor acknowledged that many women have favourable attitude and were motivated to utilize PMTCT service, but this opportunity was not exploited by the counsellors. The one assigned in the ANC often failed to offer testing:

“I don’t dare to say our PMTCT centre is fully functional. If we inform pregnant women in antenatal clinic about PMTCT at least three women will be tested each day. For example I [during my duty at ANC] sent five pregnant women for testing in the past two days and one of the five women was found positive. But in general too few women are informed about testing.” (PMTCT counsellor)

From the in-depth interviews and participant observations it became evident that the reasons for the missed opportunities were within the health care system. Several of the interviewed counsellors in general argued that resource shortage and practical constraints hindered them from offering pretest counselling. Although the VCT counsellor argued that the lack of technical competence was affecting their confidence to offer PMTCT services, the PMTCT trained counsellors lacked the commitment to offer pretest counselling.

The organization of the PMTCT services

The service points and the encounters

The PMTCT service in Awassa Health Centre was organized in five service points which requires seven women-service providers’ encounters. (See fig-3)

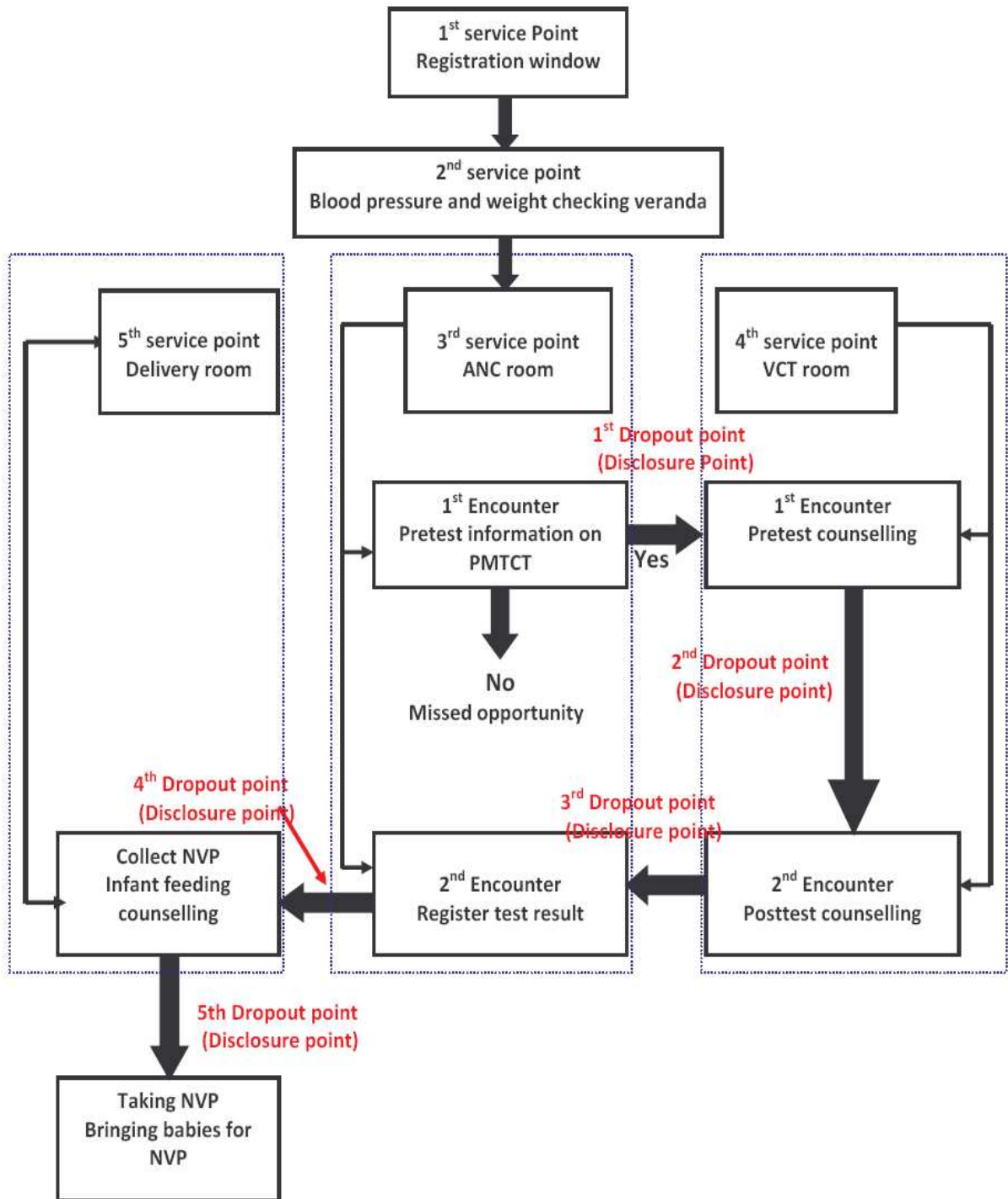


Fig 3 - The organization of the PMTCT services in Awassa Health Centre, the service points, the services, the encounters, the disclosure and the dropout points

The service points were scattered across the health centre and networked in a complex and lengthy fashion. All the service points were interrelated and interdependent making it impossible for a woman to bypass any of them to reach to the next. The first two service

points were not exclusive for PMTCT program, rather it was a must for every women seeking antenatal care to go through. In these service points women were required to have single encounter. The later three service points were exclusive for PMTCT program and women were required to have multiple encounters in these service points. (See fig-3) Women seeking the PMTCT services were expected to contact three counsellors working along the PMTCT services network. All the three counsellors had access to the women private information. Meanwhile, women were accompanied from one PMTCT service point to the next by the respective counsellor to show her the location of subsequent service points because of the complex organization of the service points.

The first service point was the registration window. Women had their first encounter with a lay person working there. The second service point was the blood pressure and weight checking point which was a veranda. In this second encounter women were checked by a nurse assistant. The third service point was the antenatal room where a PMTCT trained midwife was offering antenatal care services. Women had two encounters in the antenatal room. In the first encounter, women were informed on PMTCT and those who were willing to test were referred to the VCT room. The second encounter in the antenatal room was after posttest counselling when the woman was referred back to register her result. (See fig -3)

The fourth service point was the VCT room where a VCT trained nurse counsellor was working. Like in the antenatal room, women had two encounters in the VCT room, the pre-test and the posttest encounters. Those women who volunteered to undergo HIV testing were tested during the first encounter. In the second encounter in the VCT room women collected their test results and received post-test counselling. Then the women were referred back to the antenatal room. After registration of the test result in the antenatal PMTCT registration book, HIV positive women were referred to the delivery room. This fifth and last service point was exclusive for women who were found to be HIV positive. It was the place where NVP and counselling on infant feeding and safe delivery was given. A PMTCT trained counsellor was working there. (See fig -3)

A case of Abeba

A case is presented to demonstrate the challenges a woman had to gone through in order to get PMTCT services from Awassa Health Centre.

Abeba was four months pregnant when she started attending ANC in Awassa Health Centre. Abeba used to attend ANC in previous pregnancies as well. All her pregnancies were uneventful and she is thanking God for that. On this specific day Abeba came to the Health Centre at 1:30 in the afternoon when she expected the Health Centre to be less crowded. There were a few clients queuing in front of her in the registration window, and it took quite sometime before she got registered, got her ANC card and was ready to move on. She was told to go to the veranda where blood pressure and weight measurement were taken. She went to the veranda as instructed and was attended by a male nurse assistant who checked her blood pressure and weight and directed her to go to ANC room and to wait in front of the room until called by the midwife. There Abeba joined the other pregnant women waiting for their turn. While she was waiting she observed that the midwife came out twice accompanying pregnant women and went across the health centre to the other building. Abeba was wondering what was happening.

After a while Abeba was called to the antenatal room, the midwife working there received Abeba smiling and greeted her as usual. The midwife then asked Abeba if she had any complaints. Abeba said no and went to the examination bed as she knew the routine. When the abdominal examination was finished the midwife told Abeba that everything was fine. While Abeba was looking forward to hear about the date of her next appointment, the midwife started to talk about PMTCT and showing her the PMTCT flip chart *“every pregnant woman should test for HIV to protect her child from HIV”* the midwife said looking at Abeba’s face. Abeba became quiet for few moments confronted with different thoughts as she was not expecting the HIV test offer. Although she did not feel ready for the test Abeba did not dare to say no to the midwife as it was not customary to challenge the order of a health professional. *“I was not ready for HIV testing this time but when the midwife asked me to test I said okay”* Abeba reflected.

Then the midwife counsellor working in ANC room accompanied Abeba to the VCT room, which was located across the Health Centre. Now Abeba realized what was happening. She passed people waiting for services and became anxious that the women waiting in front of the ANC room could find out that she was having an HIV test. The midwife interrupted Abeba’s thoughts when she gave her a place to sit in front of the

VCT room and told her to wait until called by the VCT counsellor. When Abeba looked around, there were two young men from her neighbourhood. She got shocked when they greeted her and she barely had words to reply.

While waiting for VCT, Abeba was filled with dreadful thoughts and was fighting with herself; what if her husband got to know that she was having an HIV test? What could she do if she was found positive? She remembered what her husband used to say whenever she opened up the issue of HIV testing: *“When I asked my husband to test for HIV he often said: ‘I don’t need to test because I always recovered after few days of illness which is a proof for being HIV negative. Positive person would not recover’”* Abeba said. After sometime she realized that discussion about HIV testing with her husband was useless and stopped it to avoid more conflict. By the time she woke up from her thoughts, she had spent one hour waiting for VCT yet still four clients were before her.

After two hours of waiting for VCT. Abeba was called by the VCT counsellor. The counsellor was charming and she actually managed to distract Abeba for a while. Then strictly following the VCT guideline, the counsellor did the pretest counselling and drew blood for testing and then informed Abeba to wait outside until her result was ready. While waiting outside Abeba’s worry heightened, she started to think about the risks that could expose her to HIV, she believe that she had not exposed herself to risks, but she was not certain about her husband.

The counsellor came out and called Ababa’s name and invited her to get into the room and sit down. Then the counsellor told Abeba that she had HIV in her blood. Abeba was shocked as she was not prepared for a positive test result at all. *“I didn’t expect this result. I never thought that I am infected with HIV”* Abeba said. She remembers that it was very silent in the room for a long time, it seemed like a few minutes. The counsellor then told Abeba not to get worried much as many positive people are living with the virus and there is drug for PMTCT. She also told her to bring her husband for HIV testing. Abeba became furious when the counsellor mentioned her husband. She hated him and would not share her result with him. Meanwhile, she was not convinced that she is HIV positive and wanted to repeat the test somewhere else. *“I don’t trust this test result. God knows. I will recheck again in another place”* Abeba said.

When the counsellor referred Abeba back to the antenatal room for further PMTCT services Abeba got upset. But this time she challenged the counsellor's order and she replied to the counsellor that she doesn't want any more people to know her result. But the counsellor told her that all what she does is following the procedure of the PMTCT centre and there is nothing she can do to help her. She encouraged Abeba to go back to the antenatal room for registration and for further referral to the delivery room where she would get NVP to take at the time of delivery and infant feeding counselling.

Finally Abeba accepted the referral and went back to the antenatal room. Unfortunately by the time Abeba returned there the midwife had left for the day. It was already off working hour. After having spent the whole afternoon in the health centre, feeling scrutinized by neighbours and other clients, Abeba got neither NVP nor infant feeding counselling.

Abeba's case is not unique. It rather demonstrates some of the major challenges that women face accessing PMTCT service in Awassa Health Centre. Due to the fragmented and complex organization of the PMTCT services, Abeba had been going back and forth from one service point to another and encountering different providers that subjected her for invasion of privacy, risks of disclosure and long waiting hours and ultimately she lost her motivation to follow up the PMTCT programme. The costs were just too many.

Lack of privacy and risk of disclosure

Testing for HIV appeared to be a strict private issue which could not be done in the open. Interviews with VCT counsellors revealed that, clients were afraid of being labelled as a VCT seeker regardless of their test result. A VCT counsellor working in one of the non governmental VCT clinic explained as follows:

“My clients irrespective of their HIV status do not want to talk with me outside. They never greet me in front of their friends because they feel that their friends may find out that they were tested for HIV”

Another VCT counsellor also had similar experiences:

“I had one client; we had a good relationship for quite sometime. One day I found out that she had small shop close to the place where I live. I used to go to the shop to buy things and we used to exchange greetings. By the time she realized that I was her counsellor she stopped greeting me”

The interviews and participant observation revealed that, in Awassa Health Centre women were unable to make HIV testing private due to the service organization. The lack of privacy was not only the women’s concerns but also the counsellors. The counsellors appeared not to have control over the complex processes of the PMTCT program. One of the PMTCT counsellors working in Awassa Health Centre during the in-depth interviews approved the women’s vulnerability to scrutiny in the process to obtain PMTCT services:

“When pregnant women come to our clinic, I first do the antenatal examination and referral to the VCT clinic for HIV testing. When they have finished they will come back to me. Then I register their test result and I take them to the delivery room. There I introduce them to the midwife working there and it is the place where they receive the NVP. I am worried much about the women’s privacy but I have no choice” (PMTCT counsellor)

During the in-depth interviews, the counsellors were asked about the major worries expressed by the women, one of the counsellors mentioned that women had fear of disclosure when they were referred for testing.

“The major worries of women are being watched by many people when they come to VCT” (VCT counsellor)

The interviews and participant observation revealed that women were exposed to six risk occasions for disclosure of their HIV testing on their way to get NVP. The first risk occasion was when pregnant women were taken for VCT from antenatal room. On their way to the VCT room they were going through a crowd of people seeking different services. Since the VCT room was seemingly known by many clients it would be easy for people to know where the women were going and why. The second risk occasion was when the midwife counsellor accompanied pregnant women to the VCT room for testing. Accompanied by a counsellor to the next service point was something unusual. I have observed that often clients waiting for different services in the health centre seemed curious when they saw a pregnant woman

accompanied by a nurse. As it was also demonstrated in Ababa's case, being accompanied by the counsellors increase curiosity and put her at risk for scrutiny although it was meant to ease the problem of locating the service points and hence, to reduce dropouts. The third risk occasion was, when the pregnant women were waiting for VCT, since many people were coming for VCT services. The fourth risk occasion was when the women waiting in front of the VCT room until the test result was ready. The fifth risk occasion was when the VCT counsellor accompanied the pregnant women on their way back to the antenatal room as the VCT counsellor was known by many clients. The sixth risk occasion was when the midwife working in the antenatal room was taking the HIV positive woman to the delivery room. (See fig -3)

Confidentiality concerns

In addition to the risks of disclosure, women were liable for breach of confidentiality when they were referred from one counsellor to another. Although, many VCT centres in the town were offering counselling and testing services, Awassa Health Centre was the only one to offer NVP. Pregnant women who tested positive in these centres were supposed to be referred to Awassa Health Centre for NVP and infant feeding counselling. According to a PMTCT counsellor in one of the non governmental health institution, several pregnant women who seemed motivated to utilize the PMTCT service were against the mandatory referral to Awassa Health Centre to receive NVP. Women were afraid of breach of confidentiality whenever more people got involved. According to the counsellor, testing for HIV did not seem to be as big a problem as the NVP collection which had to be collected elsewhere. She gave the following example:

“There was a woman who expressed her willingness to test for HIV. Before the testing I told her that she will be referred to the health centre for NVP if is she found positive. Even before the testing she insisted me not to get referred to another person. I told her that it was not possible to get the drug unless she goes there. But she refused to go to the health centre for NVP” (PMTCT counsellor)

According to counsellors' experience, referral was perceived by some women as a process that entailed breach of confidentiality. They elaborated that going for NVP was by some women not perceived to be worth the risk of compromising confidentiality. The women

seemed not to have confidence that the counsellors would observe confidentiality. A PMTCT counsellor said that.

“When she was at term I advised her to go to the health centre to receive NVP. She refused to do so; she said no. she doesn’t want to go there; the thing should be kept between her and me. She doesn’t want to tell to a third person. I was challenged since I don’t have the NVP...”
(PMTCT counsellor)

Long waiting for PMTCT services

The interviews as well as the case of Abebe revealed that in Awassa PMTCT Centre, pregnant women were subjected to long waiting hours to get the PMTCT services. Waiting was required in all the service points throughout the PMTCT service network. Among the service points, the VCT clinic demanded the longest waiting time since the VCT services were not exclusively for pregnant women. There was a high client load and pregnant women were not given a priority over other clients. A PMTCT counsellor expressed that:

“When I refer pregnant women to the VCT room for testing they have to wait long hours. Actually it is not possible to give priority for them ...”

In the exit interviews it was noted that the long waiting hours had a negative influence on test acceptance. Several women even though they appeared to be motivated dropped out of the programme because of the long waiting hours. One of the exit interview informants, who agreed to test during her first visit but failed to test because of the long waiting, said the following,

“In my first visit I got advice to undergo HIV testing in the antenatal room. When I went to the VCT room many people were queuing. I sat for quite sometime and then I went home...”

The dropout points

In the very cumbersome route to access PMTCT services in Awassa Health Centre five dropout points were identified. The first dropout point was when the women refused the testing offer after being informed on PMTCT. A PMTCT counsellor expressed her experience

that many women were refusing the HIV testing when they were referred for VCT although they appeared willing to test during the first antenatal encounter. (See fig - 3)

“Few mothers were tested actually among those who were informed about PMTCT in the antenatal room. After their visit to the antenatal room and after they agree to undergo HIV testing many women disappear when they are referred for VCT. Even after arriving to the VCT clinic, some women cheat the VCT counsellor saying that they will come in the afternoon, but never came back”. (PMTCT counsellor)

The second dropout point was when the women failed to collect their test result and to get posttest counselling. The third dropout point was when the women failed to go back to the antenatal room after collecting the test result which was the case for Abeba. After she got her test result, she was referred back to antenatal room for registration and subsequent referral to delivery room for NVP as well as counselling on infant feeding and safe delivery. Due to the unavailability of the counsellor working in antenatal clinic by the time Abeba has finished collecting her test result, she got neither NVP nor counselling on infant feeding and safe delivery and became dropout after being tested unwillingly. The fourth dropout point was when the women failed to collect their NVP and infant feeding counselling. The fifth and the last dropout point was when the women failed to take their NVP during labour or when they failed to bring their babies for NVP in the case of home delivery. (See fig - 3)

The PMTCT services in Awassa Health Centre was organized in a way that compromised the women privacy and exposed them to disclosure and breach of confidentiality and subject them to long waiting hours that favour to become dropouts.

The testing situation

The qualitative interviews revealed that the women’s decision to test for HIV seemed to be heavily influenced by the counsellors. Although the survey showed a high level of awareness on MTCT/PMTCT (over 90%) among the antenatal attendees, several of the exit interview informants perceived themselves to be ignorant while they perceived the counsellors to be an educated expert. This perception appeared to affect both the counselling encounters and the decision to test. From the exit interviews with the women we found that during the counselling encounters several women were extremely passive. Especially women who did

not have formal schooling seemed to approach the counsellor with a very submissive attitude presenting themselves as uninformed about PMTCT altogether. One of the women who had no formal education during the exit interviews said the following.

“In the beginning of the interviews when the counsellor asked me what I would know about HIV/PMTCT, I said I knew nothing” (HIV negative woman)

In the exit interviews women were asked what they could remember from the counselling and some women were found to hardly remember any of the facts discussed during the counselling encounters. These women were attributing their failure to remember to their own ignorance. The following quote was taken from a woman who had no formal schooling.

“During the counselling encounter, the counsellor told me many things. Many things but I don’t remember any of them, because I am not educated and I don’t remember”. (HIV negative woman)

Moreover, from the exit interviews it was noted that many women ended up testing for HIV, but it was not based on intention and choice. For most women the reason for undergoing the HIV testing seemed to be to comply with the counsellors’ advice. According to the women, compliance to a health worker’s advice was mandatory even if they were not convinced that this was the best thing to do. All except one of the exit interview informants agreed to be tested on the very first day that they were asked by the counsellors. A woman who tested twice before stated during the exit interview that she had no reason to test she just did it for the matter of compliance.

“I didn't think of having HIV testing this time because I felt I am healthy. I checked twice before... I got tested today just to fulfil the request of the counsellor working in antenatal clinic.”

However, after testing some women became very upset when they got a positive test result and did not trust it. One of the women who turned out to be HIV positive expressed her scepticism about the credibility and worth of the test as follows:

“I was not ready for testing, when the counsellors working in the antenatal room asked me to test for PMTCT. I said okay. I never thought of having HIV test. And I have never imagined positive result. I don’t trust the result. God knows I will recheck some other place ...” (HIV positive woman)

Hence, some of the women enrolled in the PMTCT program never intended to test or utilise the PMTCT services. Testing for compliance did not lay the ground for confidence and service utilisation. On the contrary, dropouts at this point were common. Combined with poor organisation of the PMTCT services and the fundamental problems of confidentiality, the PMTCT services in Awassa were, for most ANC attendees, not a desirable service.

CHAPTER 6 – DISCUSSION

Discussion of the methods

A number of studies have examined the utilization of prophylactic NVP in resource poor settings and the many challenges involved (see e.g. Stringer 2003; Delva, Draper et al. 2006). This study assesses the determinants of NVP utilization from providers and user perspectives while the HIV test was being offered in an opt-in approach and the changes in PMTCT service utilization before and after the introduction of an opt-out approach. Strengths of the study include the use of methodological triangulation and triangulation of data sources. To improve the validity of the survey questionnaire we used standardized questions from published sources to assess the women awareness on MTCT/PMTCT. All major institutions rendering antenatal care/VCT/PMTCT services in Awassa town were included with few (0.5%) refusals of the questionnaire interviews that prove the representativeness of our findings.

One weakness in the quantitative method is the use of survey questionnaire developed in English while conducting the interviews in Amharic, thus it is possible that the reliability of the result could be affected. I attempted to mitigate this effect first by having only one field assistant for the survey to avoid inter-rater variability, second by giving half day training for the field assistant to minimize intra-rater variability, third conducting pretesting together with the principal investigator to calibrate the field assistant and to assess the clarity and validity of the questions. The other weakness in the quantitative method is the high (28%) incomplete data on family monthly income with possible bias towards the low income. Since the women who did not know their family income were distributed all over the different working place categories, this non response would be less likely to bias our finding. Moreover, to assess the changes in PMTCT service utilization before and after the introduction of the opt-out approach, we used a retrospective data primarily documented for reporting purpose thus it is possible that the documentation could be poor. Employing triangulation of research methods and data sources helped us to minimize the potential pitfalls related with the use of documented sources.

The qualitative data were collected by the principal investigator who has experience in qualitative interviews. While describing the qualitative findings extensive quotations from the interviews are used. One of the weaknesses in the qualitative part is the taking of notes instead of tape recording. It is possible that all the informants' words can not be captured. I attempted to grasp as much as what they have said by requesting the interviewees to speak slowly in the beginning of each interviews and asking them to repeat what they said whenever I felt that I missed something and in order at times crosscheck. Meanwhile, because of the note taking the interviews with counsellors took more time. That contributed to have a kind of follow up interviews with some of the counsellors. This would have caused discomfort to the interviewees although none of them had ever verbalized. The other weakness in the qualitative method is that the exit interviews were conducted after posttest counselling and hence only women who collected their test result were interviewed. In that the experiences of women who became dropouts were not explored because of the difficulty to trace them. However, the counsellors had encounters with both the women who utilized the complete PMTCT services and with the women who became dropouts. I believe the counsellors' experiences with these women could possibly complement this shortfall.

One of the limitations of the study is the use of a cross sectional design to study the determinant of PMTCT utilization. Our objective was however, to assess association between predictors and outcomes but not to make causal links. Furthermore, conducting the survey when the HIV testing was offered in an opt-in approach could limit us from making generalization of our findings to the opt-out approach. The other limitation is that the outcome of the opt-out HIV testing approach was assessed in the first year of implementation and different results could be obtained if assessed after a couple of years when the women get used to the program. Finally, because of low antenatal service coverage (60%) in Awassa town our findings could overestimate the PMTCT service utilization in the town.

I believe this study provides significant findings that merit consideration in the planning and implementation of PMTCT programs and can be generalized to similar settings within the country and possibly outside of the country.

Discussion of the findings

This study from Awassa town in Southern region Ethiopia showed that the PMTCT service utilisation was low and identified a number of health systems challenges. It is quite clear that the PMTCT programme does not realise its potential in terms of preventing HIV transmission from mother to child during pregnancy and childbirth. In the following I will discuss three major points related to the poor utilisation identified: Acceptability of HIV prevention services, health systems barriers to PMTCT service utilisation and the impact of the shift from opt-in to opt-out approach in PMTCT service utilisation.

Acceptability of HIV prevention services

VCT utilisation in non antenatal settings

The findings from the survey show that about 50% of the antenatal attendees had ever used VCT in non antenatal settings in contrast with findings reported within and outside of the country. In Uganda, utilization of HIV testing in non antenatal settings was found to be 4% in a household survey of women with infants where 97% of the women had attended antenatal care (Karamagi, Tumwine et al. 2006). There are obvious differences in the design of the two projects and the context in which they were implemented, that make comparison difficult, but what seems to be clear is that the VCT acceptability in Awassa town, at least among some segments of the population, is fair. Similarly, in the 2005 Demographic and Health Survey it was reported that only 17.6% of women from urban areas in Ethiopia ever utilized VCT services in non antenatal settings (CSA 2006), but 69.7% wanted to be tested (Yemane Berhane 2005). The report underscores the unmet need for VCT services across the country. The high VCT utilization in this study may reflect the extensive HIV prevention activities going on in the region in general and in Awassa town in particular. In 2005/6 the Southern region was the only region in the country that achieved 100% of its scale up plan in terms of the number of health facilities offering VCT (MOH 2006). In 2006 VCT services were offered in 179 institutions across the region and 8 of the centres were found in Awassa town.

A factor that seemed to make a difference for VCT utilisation among the surveyed women was the relationship to partner. Utilization of VCT in non antenatal settings was significantly higher among women who had discussed HIV testing with their husband and in fact, the

decision to test was often made jointly. A study conducted in Addis Ababa among pregnant women showed that perceived favourable reaction of husband was found to be one of the determinants for uptake of VCT (Maedot, Haile et al. 2007). In a context where matters related to sexuality in general is considered to be a taboo subject and where HIV/AIDS is highly stigmatised (Yemane Berhane 2005) and commonly considered a result of sin, the high level of couple communication on HIV testing is promising and may be an indicator of change in openness about HIV.

In addition, utilization of VCT in non antenatal settings was significantly higher in women whose husbands were tested for HIV. Over half of the surveyed women's corresponding husbands were found tested where, in 83.2% of the cases the couples were tested together. Couples are increasingly getting tested together before marriage and currently premarital HIV testing is becoming a norm in many parts of the country (Pankhurst 2003). One of the impetuses behind the increasing couple counselling and testing is the special focus given to pre-engagement and premarital HIV testing under all circumstances. One of the policy statements on VCT guideline explicitly states promotion of pre-engagement and premarital HIV counselling and testing (MHO/HAPCO 2007). Although most of the marriages are still conducted under the auspices of the traditional institutions or Church, couples are expected to produce a letter to prove their HIV status before marriage. This may have contributed to an increased level of community awareness and a changing attitude towards HIV testing.

PMTCT service utilisation

In spite of the high VCT acceptance in non antenatal setting and an encouraging partner involvement in HIV testing, the PMTCT service utilization in this study was surprisingly low. Less than 10% of the surveyed women in ANC had ever utilized PMTCT services. In general underutilization of PMTCT services appears to be rampant across the country as in many resource poor settings (Karamagi, Tumwine et al. 2006; HAPCO 2008). The major reason for the underutilization of PMTCT services appeared to be the lack of opportunity for pretest counselling in antenatal settings despite the PMTCT being available in both antenatal clinics in Awassa town. The findings from both the survey and the PMTCT registers during the opt-in approach revealed that over 60% of the surveyed women and over 90% of women from the PMTCT registers did not get the opportunity for pretest counselling on PMTCT. These findings do not seem unique but rather reflect the situation of many PMTCT programs in

Ethiopia. Across the country, in 2005 over 70% and in 2007 over 45% of the pregnant women attending antenatal care where PMTCT service were offered did not get the opportunity for pretest counselling (MHO/HAPCO 2006).

PMTCT service utilization was significantly higher among women attending ANC in Awassa Health Centre than women attending Family Guidance Association, because Awassa Health Centre was the sole provider of complete PMTCT services (includes HIV counselling and testing, NVP provision, counselling on infant feeding and safe delivery and delivery services) in the town during the time of the survey. Women who were found to be positive in other antenatal clinics were referred to Awassa Health Centre for complete PMTCT services and the difference in PMTCT service utilization across the two antenatal sites was obviously attributed to the referral of positive women to Awassa Health Centre.

PMTCT service utilization was found to be significantly higher among women who were aware of the availability of the drug NVP to prevent transmission to their babies. This is consistent with a study conducted in Hong Kong among antenatal attendees where over 90% accepted the testing offer because they knew that the test was beneficial for the women and babies and over 70% of them were aware of the fact that appropriate treatment could prevent the transmission from mother to child (K. Lee 2005). The awareness of the availability of the drug in general motivated pregnant women to enrol in the PMTCT programme and NVP in particular seemed to be a popular regime probably due to its simplicity being only a single dose for mother and child. Meanwhile, the vast majority (over 90%) of the surveyed women were found to be aware of MTCT/PMTCT. This seems to be consistent with a study from Addis Ababa which reported a high level of knowledge on MTCT/PMTCT among women attending antenatal care in two hospitals (Solomie Jebessa 2005). The high level of awareness could be a product of multitude of factors including Information, Education and Communication/Behavioural Change Communication campaigns, mainstreaming of HIV/AIDS prevention activities in the different sectors, multi-sectoral collaboration efforts and involvement of local institution such as Idir and Church and Mosque in prevention, care and support for HIV/AIDS (Yemane Berhane 2005; HAPCO 2008)

Moreover, PMTCT service utilization was found to be significantly higher among women who had more than one antenatal visits by the fact that the PMTCT services were not

available all the time and frequent antenatal visitors had a better chance to be offered with PMTCT services than those who came only once.

Barriers to utilisation of the PMTCT services

Scarce resources

The qualitative findings revealed that the PMTCT program in Awassa Health Centre was fraught with resource constraints. The health centre is among the poorly resourced public health institutions in the country compared to the proportion of people being served (over 130 000) (CSA 2006). The health centre serves over five times of the standard set for a public health centre (Damen Hiale Mariam 2005). The program being added in the already constrained health centre with limited resource could hamper the success of the program. Successful implementation of a PMTCT program requires allocation of resources for the additional workload associated with PMTCT services (Manzi, Zachariah et al. 2005), minimum staffing, (Perez, Zvandaziva et al. 2006) training and professional support to service providers (Raisler and Cohn 2005). Nonetheless, despite the addition of the new program, the counsellors actively involved in the PMTCT service provisions were neither given an incentive for the additional work nor were their workloads adjusted. This created reluctance among counsellors to take on the additional task of counselling. Consequently, the PMTCT services were never considered to be basic nor prioritized and did not seem to enjoy much popularity among the counsellors.

To maximize the effectiveness of a PMTCT program in resource poor settings it is now becoming common to relieve the burden of counselling from nurse/midwife counsellor while shifting much of the counselling work to community or lay counsellors (Chandisarewa, Stranix-Chibanda et al. 2007; Creek, Ntuny et al. 2007). On top of the practical challenges affecting the PMTCT program, lack of technical competence to offer PMTCT counselling were also reported by the counsellors. The nurse counsellors offering VCT for pregnant women appeared not to have the confidence to offer PMTCT services. These counsellors perceived PMTCT services as a specialization that requires technical competence which they did not perceive themselves to have to offer PMTCT counselling.

Organisation of the services and the issue of privacy

The organization of the PMTCT services during the opt-in approach appears to affect acceptability of the PMTCT program. In an opt-in approach the pretest counselling and the testing is offered in difference service points, one in the antenatal room and the other in the VCT room (Chandisarewa, Stranix-Chibanda et al. 2007; Creek, Ntuny et al. 2007). In Awassa Health Centre, the PMTCT services were organized in a more complex and fragmented fashion that required active involvement of three or more counsellors and several women-counsellors' encounters that subjected the women to unnecessary exposure as she moved and accompanied by a nurse from the one PMTCT service point to the other. This made the women vulnerable to disclosure, scrutiny and breach of confidentiality. The VCT services being shared with other clients further increased the women's risks of disclosure while they waited for their turn in a crowd of people for hours. As Jeanne Raisler et al, have pointed out, this kind of overcrowding can imply compromises in privacy (Raisler and Cohn 2005) and in this case, confidentiality.

In the local context HIV testing is a strict private issue not to get revealed to others. VCT seekers perceived that they could easily get labelled and stigmatized irrespective of their HIV test result if other people get to know that they have tested for HIV. Seeking VCT services could be interpreted as evidence of risky sexual practices that could be considered to be promiscuous. In Awassa, as elsewhere, the predominant mode of HIV transmission being sexual intercourse favours the misconception that HIV/AIDS is solely a result of sexual misconduct (Pankhurst 2003). To avoid stigma HIV testing is often done in a sly except for premarital preparation where a witness can accompany the couples. The socio-cultural context favouring secrecy of HIV testing appeared to be in conflict with the organization procedure exposing the women for scrutiny whenever they go for testing. There is no doubt that the exposure that women are subjected to as PMTCT service seekers do not favour their participation in the programme.

The complex and fragmented organization of the services also had caused a lot of waiting time. Women were unduly waiting long hours to get the services and were not given priority. Even in a well functioning PMTCT program the PMTCT services are time demanding and estimated to take an average of 90 minutes (Freddy Perez 2004). All these could affect the

women motivation and those women who failed to overcome the challenges ultimately become dropouts.

The issue of informed choice and the authoritative knowledge of the counsellor

The PMTCT registers revealed that 82.6% of the women accepted the testing offer during the opt-in approach. Considering the challenges faced by the women to access PMTCT services, the 82.6% test acceptance is quite high that may require further exploration. It could probably be related to the way the testing decision was made. VCT is defined as “the process of providing counselling to an individual to enable him or her to make an informed choice about being tested for HIV. This decision must be entirely the choice of the individual...” (International 2004) but women’s choice in this study did not seem to be a product of such a process. Women commonly perceived that they had no autonomy to make decision on HIV testing and their decision to test seemed highly influenced by the counsellors. In an opt-in approach in principle the HIV testing is initiated by the client and client voluntariness is central (CDC 1995). However, in antenatal settings where unequal power is being exercised between the perceived “elite provider” and “ignorant women”, many women would have difficulty in making a so-called informed choice.

The majority of the interviewed women claimed that they were channelled into the testing without intention. This is consistent with a study from South Africa, among first time antenatal attendees who supposedly voluntarily accepted HIV testing offer, 88% felt compelled to participate (Quarraisha Abdool Karim 1998). A study from Botswana by contrast shows that women did not feel compelled to enrol into a PMTCT program when they were routinely offered to test (Creek, Ntuny et al. 2007). Several women in our study did not seem empowered to make an autonomous decision to test. They relied on their counsellors and said in retrospect that they were tested for the sake of compliance. The majority of the women had low education and considered themselves’ to be ignorant while they perceived the PMTCT counsellors to be experts with superior knowledge. Thus the women became subservient to the advice given by their counsellor and did not negotiate HIV testing. The counsellors as educated and skilled professionals highly influenced the women decision to test.

The HIV testing advice is a kind of “authoritative knowledge” directed to save children from acquiring HIV infection from their mother. According to Browner and Press, in perinatal settings a “biomedical authoritative knowledge is defined as recommendations intended to safeguard the health of a pregnant woman and her fetus” and in order to achieve the desired outcome of having a healthy mother and baby, the authoritative knowledge is intended to influence the women decision (Press 1997 pp 118). The authoritative knowledge of a health professional is often tend to be accepted and superior because it is institutionally sanctioned, coming from higher authority, backed by well established scientific knowledge and diagnostic tests. Moreover, complying with the counsellors’ advice was perceived to be something required of a pregnant woman to demonstrate responsible motherhood and at the same time it was a sign of obedience. Refusing the testing offer was perceived to cause disappointment to counsellors with negative repercussion on subsequent encounters. The testing offer carries a force of command because of the counsellors’ legitimate power and wisdom from formal training on PMTCT and years of serving (Rennie and Behets 2006).

If the women had encountered such challenges to refuse when they were requested to opt-in, it is morally more of a burden to actively opt-out of the routine offer that is perceived to benefit the health of the baby. Following the introduction of an opt-out approach there was a significant increase in the proportion of women tested (from 82.6% to 98.8%) in agreement with findings from other resource poor settings where PMTCT services had offered in an opt-out approach (Manzi, Zachariah et al. 2005; Chandisarewa, Stranix-Chibanda et al. 2007; Creek, Ntumy et al. 2007). According to Chandisarewa et al., “offering HIV testing like other blood tests during pregnancy is helpful because it is an empowering tool for women to exercise their rights and responsibilities by accessing relevant information to make informed decisions about PMTCT and infant feeding” (Chandisarewa, Stranix-Chibanda et al. 2007 pp 846) . Nevertheless, Rennie and Behets argued that the high rate of testing during the opt-out approach is a sign of obedience to the testing advice because of the social status of the health professionals, their authority and fear of negative reaction (Rennie and Behets 2006). In an opt-out approach, the HIV testing is mainstreamed into the antenatal care services. Offering the HIV testing routinely commonly means that the test is a normative thing to be done by every antenatal attendee’s and not a matter of choice. The testing being done in the same place and time when the antenatal information was given could also mean that, even those women who were less motivated and less committed to utilize the service would not have the freedom to opt-out without confrontation with the counsellors.

The shift to an opt-out approach

Our finding revealed that the shift to an opt-out approach significantly reduced the missed opportunities to pretest counselling and increased the number of women being tested for HIV. Although the reduction in the missed opportunities for pretest counselling from 90.3% to 61.1% in the course of one year appeared to be substantial, it was not satisfactory compared to reports from similar resource poor settings where the opt-out approach is successfully implemented (Chandisarewa, Stranix-Chibanda et al. 2007; Creek, Ntumy et al. 2007). In an opt-out approach since the HIV testing is considered to be part of a standard of care, all women attending antenatal care should be offered with the services routinely (WHO 2003b). However, the situation was different in Awassa Health Centre, although an opt-out approach was said to be introduced the organization of the services did not reflect full integration of the program into existing maternity care services. Still the PMTCT services were not offered routinely because the antenatal check up and PMTCT services were offered at different service points by different providers'. On top of that that the PMTCT counsellors would not be available all the time as they also had additional duties.

The decrease NVP utilization following the introduction of the opt-out approach is certainly an issue of great concern as the shift to an opt-out approach was primarily intended to increase the number of mothers and infants receiving prophylactic ARV drugs (WHO 2004). Although, the number of women who tested positive were almost equal before and after the introduction of the opt-out approach (27 Vs 30), and the NVP regimen was all the same both before and after the introduction of an opt-out approach, the NVP utilization by the women and babies were substantially lower during the opt-out approach. In this study generally the NVP utilization by the women is high both before and after the introduction of opt-out approach compared to other resource poor settings (Chandisarewa, Stranix-Chibanda et al. 2007; Creek, Ntumy et al. 2007). Nevertheless, following the introduction of the opt-out approach there is a drop in NVP utilization by the women from 96.3% (27/27) to 83.3% (25/30). This is in agreement with findings from Botswana, Francistown where the percentage of women who received prophylactic ARV drugs for PMTCT has dropped from 70% to 66% and from 36% to 28% in Zimbabwe following the introduction of an opt-out approach although the actual number of positive women who received the prophylaxis have increased (Chandisarewa, Stranix-Chibanda et al. 2007; Creek, Ntumy et al. 2007). This could probably reflect the poor acceptability of the opt-out approach. Unlike the opt-in approach where poor

acceptability is easily evident in low test acceptance, the poor utilization of NVP could be a manifestation of poor acceptability of the opt-out approach. As it was discussed in the previous section the testing being part of a standard of care and the women being not feeling empowered to opt-out the testing offer could give us a clue that the failure to opt-out do not mean the women were actually willing to utilize the services. Hence, reduced missed opportunities and improved test acceptance could forge the underlying challenges of acceptability of the program. It could be too risky to equate the success of the opt-out approach just by looking at the reduced missed opportunities and increased the rate of testing as the intention of the shifting was not primarily for that. I argue that the acceptability of the opt-out approach should be measured against its intended objective of facilitating the uptake of prophylactic ARV drugs. The other possibility is that the women who were tested in the opt-out approach and those who tested in the opt-in approach could represent different groups of women. The difference in sero-prevalence 17.2% during the opt-in approach and 4.7% during the opt-out approach would have been a reflection of the underlying differences.

Moreover, during the opt-out approach more women (25/30) received their NVP than their babies (8/30). In 2007, 66.8% of the positive women and 41% of the babies had received NVP across the country (HAPCO 2008). A multitude of factors could implicate this huge discrepancy in NVP utilization by the women and babies. First, it could be associated with the regime where the women are receiving the drug during pregnancy while the babies are receiving the drug during delivery. Second, it could be related to poor documentation since the NVP was prescribed for the women during pregnancy and for the babies' after birth possibly by a different person. Third, it could be related to poor adherence, in a research conducted in Zambia it became evident that 26% of the positive women who received NVP were found to be non adherent when checked for cord blood (Stringer 2003). If a woman failed to take their NVP, it is less likely that she would bring her baby for NVP unless she delivered in a health institution. Fourth, it could also be related to the counselling itself. In the place where HIV testing is offered in an opt-out approach, large number of women is expected to be counselled since all first time antenatal attendees are offered with HIV testing. In that case there is a possibility that the counselling could be compromised because of the large client load and of course because of the time demanding procedure of PMTCT counselling itself. But we have no evidence to claim that the counselling during the opt-out approach would have been compromised. According to Chandisarew et al., who did a study in Zimbabwe among women who utilized PMTCT services in an opt-out approach found out

that the women were satisfied with the counselling and the counselling had helped them to make an informed decision (Chandisarewa, Stranix-Chibanda et al. 2007).

Overall the mother-infant pairs who received NVP were significantly reduced from 89.8% (24/27) to 26.7% (8/30) following the introduction of the opt-out approach. Similarly in Zimbabwe the number of mother infant pairs who received NVP dropped from 36% to 28% although the actual number of mother-infant pairs receiving the prophylaxis have increased (Chandisarewa, Stranix-Chibanda et al. 2007). In general the impact of the PMTCT program in Awassa Health Centre in terms of its intended outcome of averted infections is really questionable. Very few infections were actually averted before and after the introduction of the opt-out approach. In order to translate these numbers into possible averted infections by the PMTCT program we did the following calculation. According to Guay et al., only one third of HIV positive women can transmit the virus to their babies (range 20% to 45%) among breast feeding population (Guay, Musoke et al. 1999). Furthermore, a single dose of NVP given to women and babies can reduce the transmission by 41%. Therefore, among the 24 positive mothers only 8 of them could transmit the virus during the opt-in approach and 3 of 8 positive women could transmit the virus during the opt-out approach. When the 8 mother-infant pairs were assumed to have taken their NVP during the opt-in approach and the 3 mother-infant pairs during the opt-out approach, the potential averted infection could have been 3 during the opt-in approach whereas 1 during the opt-out approach (See table -5). But, if the program would function with full capacity within the given resources the number of averted infection would have been as much as 10 during the opt-out approach alone.

CHAPTER 7- CONCLUSION AND RECOMMENDATIONS

Conclusion

The use of triangulation of research methods and data sources in this study helps us to grasp issues surrounding PMTCT service utilization from different perspectives. The data collected by the different methods and from different sources are found to be consistent and complementary. In general the PMTCT service utilization was found to be low despite the programme being implemented in a context with a high level of VCT acceptability, high level of partner involvement on HIV testing, and a high level of awareness of MTCT/PMTCT in the part of the women. The underutilization of the PMTCT service is mainly due to the weakness in the health care system to implement the program. During the opt-in approach the program was poorly resourced and not well integrated into existing maternal health care programs. On the part of the counsellors there was perceived lack of competence and poor commitment to offer PMTCT services. The missed opportunities as a result were unduly large in the presence of an operating PMTCT program in the health centre. The complex organization of the services was another challenge which could affect the test acceptance by causing invasion of privacy, risk them for disclosure and breach of confidentiality. Furthermore, the PMTCT counselling did not enable the women to exercise autonomous decision to utilize PMTCT services.

While the test was offered in an opt-out approach the missed opportunities were significantly reduced and accompanied by an increased in the number of women being tested. The shifting into an opt-out approach is however, primarily intended to improve utilization of prophylactic ARV drug. In this study NVP utilization by the women and babies has dropped following the shift into an opt-out approach. Appropriate interventions have to be then devised to backup the success of the opt-out approach in reducing the missed opportunities and increasing the proportion of women being tested. Otherwise it will serve just as an effective screening program.

In general owing to the missed opportunities and dropouts, the overall impact of the PMTCT program in preventing MTCT is questionable. The numbers of potentially averted infections are so small compared to the estimated number of HIV positive pregnancies in the town, the

intended outcome of the program and the resources being used for the program. The situation in Awassa Health Centre points to a great health system failure in translating PMTCT policy into a service provision structure that works and does not compromise the confidentiality, privacy and time of the antenatal attendees in general and the HIV positive women in particular. Although the study was done in Awassa and in the particular context surrounding the PMTCT services there, the findings may be of high relevance also in other settings in the Southern region where similar problems of PMTCT utilisation are documented. These fundamental health systems problems need to be recognised and addressed before the potential impact of PMTCT programmes on MTCT rates can be realised.

Recommendations

- Re-organization of the PMTCT services to minimize potential dropouts and disclosure points
- Capacity building of the health centre including training on PMTCT for all staff involved in offering maternity care services since they are working in rotation bases.
- Improve the quality of counselling through extensive training for VCT/PMTCT counsellors, allocation of sufficient resources, continuous supervision and refresher training for the counsellors to update with recent advances.
- Further research to investigate why NVP utilization by babies are lower in the opt-out approach and how to improve NVP utilization by the mother and infants in accordance with the increasing proportion of women who are testing to achieve the intended outcome of the routine testing policy.

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ANNEX

Annex 1- The Survey questionnaire

Antenatal clinic site _____

Code Number _____

Part I –Demographic and obstetric characteristics

1. How old are you? _____ years
2. Where are you living currently?
 1. Urban
 2. Rural
3. What is your marital status?
 1. Single
 2. Divorced
 3. Married
 4. Widowed
4. What is your religion?
 1. Christian
 2. Muslim
5. Others, specify _____
6. How many pregnancies do you ever had? _____
7. How many deliveries do you ever had? _____
8. How many living children do you have? _____
9. Where did you deliver your last child? 1. Health institutions 2. Home
10. How many months pregnant are you now? _____
11. Have you visited other health facility in this pregnancy for ANC?
 1. Yes
 2. No
12. How many antenatal visits do you have so far?
 1. First visit
 2. Two or more visit
13. What is the highest level of education you completed? _____
14. What is the highest level of education your husband completed? _____
15. How much your family income per month? _____Eth. Birr
16. Where are you working?
 1. Government employee
 2. House wife
 3. Petty trading
 4. Others, specify _____

Part II- Awareness and perception on MTCT/PMTCT and partner involvement in PMTCT.

1. Have you heard about mother to child transmission (MTCT) of HIV?
 1. Yes
 2. No

2. Where did you get the information?
 1. Friends
 2. Health institutions
 3. Media (TV, radio, newspaper, journals or other printed articles)
 4. Others, specify _____
3. When did you learn about PMTCT?
 1. During this pregnancy
 2. Before this pregnancy
4. During your visit to antenatal clinic, have you ever been told about PMTCT?
 1. Yes
 2. No
5. Do you think woman with HIV infection can infect their babies with HIV during pregnancy?
 1. Yes
 2. No
 3. Unsure
6. Do you think woman with HIV infection can infect their babies with HIV during labour and delivery?
 1. Yes
 2. No
 3. Unsure
7. Do you think woman with HIV infection can infect their babies with HIV through breastfeeding?
 1. Yes
 2. No
 3. Unsure
8. Do you think there are medicines which HIV infected mothers can take for PMTCT?
 1. Yes
 2. No
 3. Unsure
9. What other preventive measures for MTCT know other than medicine?
 1. Safe delivery practice
 2. Not breast feeding
 3. Safe sex
 4. It is impossible to prevent
 5. I don't know
 6. Others, specify _____
10. Have you ever used PMTCT services?
 1. Yes
 2. No
11. Are you willing to utilize PMTCT services during this pregnancy?
 1. Yes
 2. No, why _____
 3. Unsure
12. Will you bring your husband to the clinic for PMTCT counselling?
 1. Yes
 2. No, why _____
 3. Unsure

13. Have you ever discussed about HIV testing with your husband?
 1. Yes 2. No 3. Unsure
14. Have you ever been tested for HIV?
 1. Yes 2. No
15. Did you go to collect your result?
 1. Yes 2. No, why _____
16. If you have a partner, has he had an HIV test?
 1. Yes 2. No 3. Unsure
17. Do you practice sex in pregnancy?
 1. Yes 2. No
18. Did you or your partner use condom during sexual intercourse in this pregnancy?
 1. Yes, every time
 2. Yes, a few times
 3. Yes, once or twice
 4. Not at all
19. What do you plan to feed your baby?
 1. Formula feeding
 2. Breast feeding
 3. Mixed feeding
 4. Cows milk
 5. Others, specify _____
20. When you come for ANC check up what services do you expect to get?

21. Have you got the antenatal service as you expected?
 1. Yes 2. No
22. Do you think there are things to be improved in the antenatal clinic?
 1. Yes 2. No
23. If yes, please specify? _____

Annex 2- Interview guide for in-depth interviews with counsellors

Background data:

Code number

Health Centre

Sex

Age

Education

PMTCT training

Professional background

Year of experience in nursing/midwifery

Year of experience in counselling

The counselling situation:

1. What are the major problems that you experience working as a counsellor?
2. How did you feel prepared to work with PMTCT?
3. How do you see your role in PMTCT? What does counselling involve?
4. What do you say to the women about:
 - a. PMTCT
 - b. Disclosure
 - c. Partner involvement
 - d. Infant feeding
 - e. Nevirapine
 - f. Sex
5. What are the major concerns and worries that women express to you?
6. What would you say characterises the ones that bring their partner for counselling?
7. How many times do you see an HIV negative woman? An HIV positive woman?
8. How would you describe women's trust in the health care system in general and in PMTCT in particular? Have you ever experienced that the women do not trust you or that they doubt your confidentiality?
9. Do you know any of the women enrolled in the PMTCT programme? If so, how does that affect their attitude towards you?

I am now going to ask you some very personal questions and of course it is up to you to reply or not.

10. Who in your experience are the women who get infected with HIV? Do you see any pattern? (social and economic factors)
11. Whom would you say are in general at risk today?
12. Do you have any personal experiences with HIV in your family? Among friends? Will you tell us about it? How is your relationship with that afflicted person today?
13. Are you afraid of getting HIV?
14. Do you consider yourself at risk?
15. Have you tested?
16. Also people working in the health care system get infected. How do people talk about the sources of infection?

Annex 3– Interview guide for exit interview

Background data:

Code number

Address

Age

Education

Marital status

Number of children

1. How did you experience the counselling?
 - a. Did you understand the information?
 - b. What were you told? HIV status, PMTCT (infant feeding, ARV, sex)
 - c. How were you prepared to receive the results?
 - d. Do you have a lot of questions that you did not ask?
 - e. When will you come back for counselling next time?
2. Do you think you will be able to discuss the issues of PMTCT with your partner?
3. Will you discuss PMTCT in your community?
4. Will you make use of the PMTCT services?
5. Do you think that you will tell your partner about your testing?
6. Do you think you will use the PMTCT services? (for positive women)

Annex 4 - Information letter for the qualitative interviews

I am Alemnesh Mirkuzie. I am working in the College of Health Science, Debu University. I am doing a research on counselling and PMTCT and I am interested in your experiences with the counselling services and the PMTCT programme here in Awassa. The overall aim of the study is to strengthen the services and thus ultimately contribute to reduce MTCT.

I would like to ask if you would be willing to participate in this study. If you are willing to do so, I will interview you for about your personal experience. I want to emphasise that participation is voluntary. If you feel uncomfortable with some of the questions you have the right not to answer. If you decide not to continue the interview at some point, you have the right to do so. If you agree to be interviewed you should know that I will not record your name or your identification will be protected and will not appear in any document. The interview data will be handled by me and my advisors only.

Finally, if you have any questions please ask either during the interview or afterwards.