



Uptake of Prevention of Mother to Child HIV Transmission (PMTCT) Option B+ ART Program among Pregnant and Lactating Mothers Attending Ante Natal Care (ANC) Clinic at Jimma University Specialized Hospital, Southwest Ethiopia



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Submission: September 17, 2018; Published: October 26, 2018

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Abstract

Background: Prevention of mother to child transmission (PMTCT) Option B+ ART program provide all HIV-positive pregnant or breastfeeding women with a course of anti-retroviral drugs to prevent mother-to-child transmission. A triple-drug anti-retroviral regimen should be taken throughout pregnancy, delivery and breastfeeding - continuing for life, regardless of CD4 count or clinical stage. However, uptake and uptake of this new approach, among HIV positive pregnant and lactating mothers was not studied in Jimma university specialized hospital; Hence the objective of this study was to assess uptake of PMTCT option B+ ART program among pregnant and lactating mothers attending anti natal care (ANC) clinic at Jimma University specialized hospital.

Methods: An institution based cross sectional descriptive study was conducted with the aim of assessing uptake of PMTCT option B+ ART program among HIV positive pregnant & lactating mothers attending ANC clinic at Jimma University specialized hospital from May 01 to May 30, 2014. All HIV positive pregnant & lactating mothers (40) who visited ANC clinic had been interviewed by trained nurse using pretested, closed ended structured questionnaire after respondent consent was taken. Data analysis was done using SPSS 16.0 computer software. Finally data was presented in statement and tables.

Results: Out of 40 pregnant and lactating HIV positive mothers included in the study, almost all of them were found in the age group of 18-35years (92.5%) and more than half are literate 25 (62.5%) & their income per month is less than 900 birr (72.5%) as well as 67.5% of them are house wife who were married (80%). Twenty eight (87.5%) of them accepted their HIV positive status due to their history of different exposures and 82.5% of them were tested during first trimester and almost all of them were using PMTCT option B+ ART service (90%), and their reason why they accept was for protection of their baby from HIV (38.71%) and followed by due to having knowledge after counseling (34.41%). About two-fifth of mothers were using condom as one contraceptive method. There is association between initial acceptance of HIV positive test result and uptake of PMTCT option B+ ART services.

Conclusion: almost all of HIV positive pregnant & lactating mothers have accepted their HIV positive status. Two third of them were tested at first trimester, and the uptake of PMTCT option B+ ART service is very high at ANC clinic in Jimma University specialized hospital. So, this new PMTCT option B+ ART program should continue with pre and post-test counseling along with ANC follow up.

Keywords: PMTCT option B+; Uptake; Pregnant and lactating mothers; ANC clinic; JUSH

Introduction

PMTCT Option B+ is a new program that Provide for all HIV-positive pregnant or breastfeeding women with a course of anti-retroviral drugs to prevent mother-to-child transmission. A triple-drug anti-retroviral regimen should be taken throughout pregnancy, delivery and breastfeeding - continuing for life, regardless of CD4 count or clinical stage [1].

If the mother is breastfeeding, she should also continue to take the triple-drug anti-retroviral regimen until 1 week after

breastfeeding has finished. Eligibility is determined at a country level. WHO recommends women with a CD4 count of ≤ 500 cells/mm³ (or clinic stage 3 or 4) should continue taking anti-retroviral treatment for life. This course of medication should be permanent and taken every day in order to postpone the development of HIV into AIDS. HIV-exposed infants all infants born to HIV positive mothers should receive a course of medication for PMTCT, which is linked to the drug regimen that the mother is taking and the infants feeding method. If Breastfeeding, The infant should receive

once-daily NVP from birth until age 6 weeks. If Not breastfeeding, the infant should receive once-daily NVP (or twice-daily AZT) from birth until age 4-6 weeks [1]. Option B+ is the way of full integration and simplification at the primary health care level; the good news is that a fully integrated and simplified approach to PMTCT and ART has now begun to be implemented successfully on a large scale. As mentioned earlier, "Option B+" provides a potentially better alternative to Option A or Option B through which all pregnant women living with HIV can initiate ART for life regardless of CD4 count.

Through making a positive HIV test the only condition necessary to initiate ART, Option B+ makes it feasible to implement the most effective PMTCT interventions for mother and child at the smallest and most remote health centers, thereby ensuring that lack of access to CD4 testing does not prohibit women from receiving needed treatment. Additionally, Option B+ also provides a straightforward approach to postnatal follow-up that can be integrated with efforts to help women safely breastfeed their infants. And, by avoiding the "start-stop-start" approach that would be required with option B for many women who might have more than one pregnancy, Option B+ makes it easy to convey clear public health message to all people in the community that ART already started, needs to be adhered to for life. Furthermore, Option B+ offers additional potential health benefits, including reduction in sexual transmission of HIV, improved maternal health, having a programmatic advantage, decreasing MTCT of HIV by 2%, improving of mothers & child life/survival [2]. WHO released different updated PMTCT programmatic approach like 'Option A', Option B, and Option B+ since 2010. But initiation of ART was depend on CD4 count primarily and the next was start-stop-start approach which is tedious and ineffective one. However, after the latest program "option B+" was recommended in 2012 worldwide, some of developing countries like Malawi, Uganda and Ethiopia have already adopted the latest one, option B+. But its uptake and refusal status was not studied yet in the study area. Previously, in Ethiopia all pregnant & lactating mothers who are HIV + were get ART based on their CD4 count but this way was found to be ineffective according to WHO new guideline that made conclusion on CD4 count testing prerequisite for PMTCT as not feasible in Malawi. GoE (MOH) endorsed the strategic shift to "Option B+" in august 2012. But still it may have some implementation gaps that hinder uptake and uptake of mothers towards this new option B+ approach [3,4].

A critical component for how well an intervention will work is how acceptable it is to its recipients/user. In choosing anti-retroviral regimens for PMTCT; the efficacy of a regimen has typically been a much more important criterion than its acceptability, given that it has been justifiably assumed that women will want to use the most effective regimen. However, in cases where two options may have similar efficacy for an individual woman, understanding the relative uptake of the options becomes especially critical from a human rights perspective [5]. Therefore, in comparing Options A, B, and B+ it is important to hear from women living with HIV themselves regarding which option

they would prefer, and also whether they would like to have the opportunity to choose between the two options. Option B and especially Option B+ may have health benefits for women with higher CD4 counts. Nevertheless, the health benefits of Option B+ may not be dramatic compared to option B for women with CD4 greater than 350, and some fraction of women with CD4 >350 may prefer to stop ART after the cessation of breastfeeding and only re-start again when it is clearly necessary for their own health. With this in mind, countries may want to use qualitative methods such as surveys or focus groups to understand in their own local cultural context women's perceptions, attitudes, and preferences with regards to Options A, B, and B+ [6-8].

According to FMOH-HSDP IV annual performance report for EFY 2004 (2011/2012), The proportion of HIV positive pregnant women who received ARV prophylaxis to reduce the risk of MTCT is at 25.5% during the fiscal year through only 16.7% of HIV exposed babies received ARV prophylaxis. This has resulted in a 10 fold increase in the number of facilities providing PMTCT services in the last 5 years [9]. In august 2012, the GoE endorsed the strategic shift to PMTCT Option B+ which addresses the four prongs (trained human resource & scale up of service, PMTCT service quality improvement, and demand creation using health development army, & monitoring & evaluation.) For PMTCT & consists of provision of a single triple drug ART regimen to HIV positive pregnant women without regard to CD4 count & maintains continuity of care treatment for the mother & infant within the MNCH, platform from antenatal detection to post-breast feeding testing of the infant. As a new starter also in Ethiopia, uptake of this new program was not studied in JUSH [10,11].

Option B + ART program initiates ART for HIV positive pregnant and lactating mothers at ANC at the time of diagnosis regardless of CD4 level. But CD4 count is important to monitor response to treatment & to detect emergence of treatment failure even though not expected for several years if patient is adherent to treatment because once started it should be continued for life. In line with offering result of HIV test in a confidential manner, counseling should be given as integrated package of services in ANC/labor & delivery/post-natal services because Prevention, treatment, decision about family or child testing, family planning & care decision can be made together [12].

Specifically, in JUSH at ANC clinic Option B+ was commenced on August 2013 so it is important assessing HIV positive pregnant and lactating mothers' uptake of this service to dig out the gap since it is new approach. Even though the program was started on August 2013 in JUSH at ANC clinic, specifically the uptake and associated factors of Option B+ was not assessed so far and unknown. Therefore, the aim of this study was to assess uptake of PMTCT Option B+ ART programme during pregnancy and lactating period, assess why the mothers accept or reject the services and assess the awareness level of mothers about option B+.

Methods and Participants

This study was conducted in Oromia region, Jimma Zone, Jimma town, at Jimma university specialized hospital, obstetrics

and gynecology department, PMTCT service antenatal care clinic from May 01 to May 30, 2014. It is located 350km southwest of Addis Ababa. Currently there are 2 woreda and 17 kebeles and 1 specialized Teaching Hospital, 1 Defense Hospital, 1 police Hospital, 1 Primary Hospital and 3 Health centers found in Jimma town. The study included the specialized teaching hospital. JUSH is a teaching hospital with 65 physicians, 20 pharmacist & pharmacy technicians, 10 radiographers & radiologists, 218 nurses, 31 midwives, 21 medical laboratory & lab technicians and 15 patient registration workers and other like anesthetists, physical therapists. In fact, JUSH was giving ART services as per the protocol at ART clinic for a long period of time but the new PMTCT option B+ program was given at ANC/PMTCT clinic with regular follow up simultaneously with antenatal and post-natal care under obstetrics/gynecology department which is one of specializing area in the hospital. The other departments include pediatrics' and child health, surgery, internal medicine, ophthalmology, dental medicine, psychiatry, ANT clinic, dermatologic clinic, radiology.

Institution based cross-sectional descriptive study design was used to assess uptake of PMTCT option B+ ART program among all HIV positive pregnant & lactating mothers attending ANC clinic, department of obs/gynecology, at Jimma University specialized hospital. All HIV positive pregnant & lactating women were attending JUSH at ANC clinic-starting from HIV positive result finding up to 18 month of postpartum period, option B+ ART follow up of mothers' is taken place at ANC and then linked to regular ART clinic. All HIV positive pregnant and lactating women that were in PMTCT follow up monthly as per their schedule during the study period and all new HIV positive cases who came for ANC visit during that period were included in the study.

A structured interviewer administered pretested data collection format was used to collect data. Data collector translated the English version of the format into the local language to capture data from the study participants. one nurse professional in ANC clinic was trained on how to approach all those old and new HIV positive cases on their monthly follow up day. Always the data collector checked number of patients' chart and presented clients, not to miss those absent appointed mothers of the day before data collection. Then after finishing of each client's interview, the completeness of a single questionnaire was revised in between and finally as a whole by the principal investigator.

Finally, at the end of the month after identifying complete and incomplete questionnaires, the data was filled into computer software step by step with trained personnel and followed strictly along with multiple cross checking; the quality of pre-

analytical (completeness checking), analytical (using software and calculating chi-square & p-value) and post-analytical (keeping consistency) stages were assured.

Formal letter was written from student research program to JUSH and the medical director accepted the request. The purpose of the study was explained to each respondent before data collection, and those who were volunteer to participate in the study were included after verbal approval of their agreement. All information was kept confidentially throughout the study except communicating with the assigned professional.

In this research, the following operational definitions were used:

HIV positive pregnant and lactating women

Those pregnant and lactating women who live with HIV.

Acceptability

Acceptance of women to make themselves in positive line with positive HIV test result and PMTCT option B+ ART program/ services without any refusal and confusion.

Awareness of PMTCT

Having a know how about PMTCT of HIV.

Option A

A program which allows all HIV positive pregnant & lactating mothers to take ART w/n their CD4 count is less than 350.

Option B

A program which allows all HIV positive pregnant & lactating mothers to take ART, but the mother can discontinue after her baby started prophylaxis & followed by her CD4 count.

Option B+

A program which allows all HIV positive pregnant & lactating mothers to take ART irrespective of CD4 count for life long.

Parity

No of pregnancy after period of viability (>=28weeks in Ethiopia)

Perceived Illness

Those sign & symptoms that are observed merely by the clients not by health professional.

Trimester

Period of three months or about three months.

Results

Socio-demographic characteristics

Table 1: Socio-demographic Characteristics of HIV positive pregnant and lactating mothers attending ANC clinic at JUSH, Southwest Ethiopia, 2014.

Characteristics	Number (40)	Percentage
Age		
<18yr	3	7.5
18-35yr	37	92.5

Ethnicity		
Oromo	15	37.5
Amhara	10	25
Tigre	8	20
Other...@@	7	17.5
Religion		
Muslim	16	40
Orthodox	13	32.5
Protestant	7	17.5
Others (specify).....##	4	10
No of children		
no	15	37.5
One to three	20	50
Above three	5	12.5
Income per month		
<900birr	29	72.5
>=900birr	11	27.5
Occupational status		
House wife	27	67.5
Merchant	9	22.5
Other....**	4	10
Marital status		
Single	4	10
married	32	80
divorced	3	7.5
widowed	1	2.5

@@= Kaffa, Gurage, Yem, Dawuro, ## =Adventist, catholic, **=farmer, employed,

Among the total of 40 pregnant and lactating HIV positive mothers who visited the hospital during the study period, all of them were included in the study that form the basis of my analysis. Almost all of them 37 (92.5%) were found in the age group of 18-35yrs. Sixteen (40%) of them were Muslim by religion while more than one third 15 (37.5%) were Oromo by ethnicity. Twenty-five (62.5%) of the respondents were literate and more than two third 27 (67.5%) were housewives by occupation. Majority 32 (80%) of the women were married whereas half (50%) of them had less than or equals to 3 children. Twenty-nine (72.5%) of the respondents had monthly income of <900 Eth Birr (Table 1).

Out of all pregnant and lactating HIV positive mothers included in the study 28 (87.5 %) of them accepted their HIV positive status due to having history of different exposures among thirty-three (82.5%) of them who were tested at first trimester. Out of 32 mothers who accepted their HIV positive sero status, 28(70%) of the respondents were perceived as an unprotected sexual intercourse would be a risk factor for their contracting HIV. Forty (26.15%) of the women were counseled on how to sort & taking way of option B+ ART program whereas 39(25.49%) of them were counseled on how to follow up ANC & get PMTCT services as a main point of posttest counseling at ANC clinic (Table 2).

Table 2: Different variables showing uptake of PMTCT option B+ ART program among pregnant & lactating women attending ANC clinic at JUSH, Southwest Ethiopia, 2014

Variables	Number/Frequency **	Percentage
Acceptance status of HIV + Result		
1 st trimester accepted	28	87.5
rejected	5	15.63
2 nd trimester accepted	3	9.38
rejected	2	6.25
3 rd trimester accepted	1	3.13
rejected	1	3.13

Perceived mode of exposure to HIV historically		
Unprotected sexual intercourse	28	70
blood & blood product contact	7	17.5
commonly using of sharp materials	2	5
unknown, simply with test result(forgotten)	3	7.5
Focus of pot test counseling		
On how to discuss with husband/sexual partner	34	22.22
On how to live with HIV	23	15.03
On how to sort & taking way of ART program	40	26.15
On how to protect from secondary exposure	12	7.84
On how to follow up ANC & get PMTCT services	39	25.49
Others (on social, psychological.....)	5	3.27
Acceptance of option B + ART service		
Accepted	36	90
rejected	4	10
Reason to accept		
wishes to protect baby from HIV	36	38.71
wishes to health of self	15	16.13
b/c of cost free & accessibility	10	10.75
due to having k/dge after counseling	32	34.41
Reason to reject		
Not counseled enough/well.	2	50
not accepted +ve result	1	25
b/c of lifelong treatment & fearing of drug s/ effect	1	25
It is not important to prevent MTCT.	0	0
Maternal period while starting ART		
During first triminister (1-3mon)	24	66.67
During second triminister (4-6mon)	6	16.67
During third triminister (7-9mon)	4	11.11
After delivery (during breast feeding)	2	5.56

**=the sum may not be 40 b/c women may answer more than one answer.

Majority 36 (90%) of mothers have accepted PMTCT option B+ ART program. Their reason for accepting the option includes protection of baby from HIV (38.71%) and followed by due to having knowledge after counseling (34.41%). The main reason for those mothers' who rejected option B+ was not being counseled

enough/well (50%). Thirty-six (37.90%) of mothers were counseled on advantage of the new PMTCT option B+ to accept the treatment so that 24 (66.67 %) of them were started the treatment during first trimester and the rest 12 were started on the second & third trimester (Table 2).

Table 3: Variables assessed with uptake of PMTCT option B+ ART program among pregnant & lactating women attending ANC clinic at JUSH, Southwest Ethiopia, 2014.

Variables	Number/frequency **	percentage
Type of contraceptives used		
condom	35	39.77
injectable	32	36.36
pills	10	11.36
implants	6	6.82
nothing else used	5	5.68
Drug side effect observed		

bowel habit change & kidney dysfunction	3	8.33
memory problems	0	0
Difficulty of sleeping	2	5.56
skin rash & headache	1	2.78
no side effect seen	29	80.56
Others....	1	2.78
CD4 status/level		
<350	2	5
350-500	3	7.5
>500	13	32.5
Not investigated	22	55
Sexual partner/husband's HIV status		
positive	18	45
negative	10	25
not confirmed	8	20
Not investigated	4	10
Awareness of mothers' about MTCT		
during pregnancy	6	15
during delivery	30	75
after delivery	3	7.5
I don't know	1	2.5
perceived illness after ART started		
Cough	6	10.53
diarrhea	10	17.54
Fever	15	26.32
no illness seen	26	45.61

**=the sum may not be 40 b/c women may answer more than one answer.

Thirty five (39.77%) of mothers' currently using condom as one contraceptive method preferably and followed by injectable 32 (36.36%) whereas 5 (5.68%) of mothers' who had unprotected sexual intercourse (nothing else used contraceptives). Twenty nine (80.56%) of mothers' who were taking triple ART regimen nothing faced any side effect and 22 (55%) of them were not investigated to CD4 count that is why option B+ recommended (Table 3).

Eighteen (45%) of mothers' sexual partner/husband sero status is positive, Ten (25%) of them were negative, eight (20%) of them were not confirmed and four (10%) of them were not investigated due to the reason of not hearing of their wife status and some of them who were negative are due to sero-discordant as well as most of them (75%) had an awareness about mother to

child transmission mode of HIV is high during delivery. Twenty-six (45.61%) of women were not faced any type of perceived illness (Table 3).

There is association between initial acceptances of HIV positive test result and uptake of PMTCT option B+ ART service because to start and continue treatment primarily understanding of what diagnosis they have is important so all those accepted & half of rejected their positive test result were accepted option B+ but all those non-accepted option B+ were not accepted their positive test result from the beginning. Additionally, educational status and acceptance of PMTCT option B+ ART program are associated (Table 4).

Table 4: Association between uptake of PMTCT option B+ ART program and other variables among HIV positive pregnant & lactating mothers' attending ANC clinic at JUSH, Southwest Ethiopia, 2014.

Variables	Uptake of PMTCT option B+ ART		Total	Statics/test
Initial acceptance of HIV + status	YES	NO		P=0.000
Accepted	32	0	32	Fisher exact test =17.8
Rejected	4	4	8	P<0.05
Total	36	4	40	Associated
Educational status			25	P=0.006

Literate	25	0	15	Fisher exact test =7.41
Illiterate	11	4	40	P<0.05
Total	36	4		Associated

When the assumption for chi-square test failed, I used fisher exact test to see the association.

Discussion

Thirty-seven (92.5%) of pregnant and lactating HIV positive mothers were found in the age group of 18-35yrs and more than half (62.5%) of them are literate. Exactly half (50%) of respondents had 2 children averagely and majority (72.5%) of them had monthly income of <900 Eth Birr. This may be due to high number of housewives (67.5%) who were married (80%). Twenty-eight (87.5%) of mothers accepted their HIV positive status initially because their acceptance was due to pre and posttest counseling effect in different aspect and their experience of exposure to different risk factors. Most of them (82.5%) were tested at first trimester so that was because of PMTCT services availability and due to ordering of PICTH (HIV test) when mothers are coming at first visit and they linked to ANC/ PMTCT clinic soon. The focus of posttest counseling was majorly on how to follow up ANC and get PMTCT services but not as much satisfactory because counseling topics were not organized well that is why mothers respond was distributed to all choices and clients were not understand enough.

Almost all (90%) of mothers were accepted PMTCT option B+ ART program. Their reason for accepting the option includes protection of baby from HIV infection (38.71%) and followed by due to having knowledge after counseling (34.41%). so this indicates that they had no awareness about advantage of ART beyond protection to baby rather it decreases viral load and increases the life of patient by delaying disease progress The main reason for those mothers' who rejected option B+ was not being counseled enough/well (50%). This implies counseling client in different aspect has a great value on acceptance of PMTCT option B+ approach since it is new program. When we compare those who were tested at first trimester and those started ART at first trimester; number of tested was greater than number of client who started treatment (33>24). This gap tell us there was a wide gap of counseling to initiate ART and this gap also may be exaggerated due to non-acceptance of their HIV positive sero status initially.

Thirty-five (39.77%) of mothers' currently using condom as one contraceptive method preferably and followed by injectable 32 (36.36%) whereas 5 (5.68%) of mothers' who had unprotected sexual intercourse (nothing else used contraceptives) that may lead them to unwanted pregnancy as well as infection with another type of HIV. Twenty-nine (80.56%) of mothers' who was taking triple ART regimen nothing faced any side effect and 55% of them were not investigated to CD4 count that is why option B+ recommended. Twenty (50%) of mothers' sexual partner/husband sero status was positive and 10% of them were not investigated due to the reason of not hearing of their wife status and some of them were negative due to sero-discordant. Majority (75%) of

women had awareness about mother to child transmission mode as it is high during delivery.

There is association between initial acceptance of HIV positive test result and uptake of PMTCT option B+ ART program because to start and continue treatment primarily understanding of what diagnosis they had, and its severity is very important. Not only this but also their educational status and acceptance of new option B+ services also had an association because knowing more about science made them to seek treatment and their critical thinking about themselves would help them to go to the solution of the problem.

The new option B+ ART program should continue with enough pre and posttest counseling along with ANC follow up by JUSH, ANC clinic professionals by Promoting and teaching those HIV positive mothers about contraceptives' multiple of benefit for herself (not to acquire other STI) as well as for her baby (if possible not to be pregnant). JUSH, ANC clinic health workers should invest their time to counsel clients not to refuse starting ART earlier at first trimester and should aware all mothers about merit of knowing their HIV sero status before conception rather merely coming for ANC follow up after having pregnancy. This study had many limitations such as small sample size due to the case rarely found, non-sampling technique used which may end up non-generalizability of the finding and strong regression analysis was not done due to the failure of assumption that related with sample size.

Acknowledgment

First of all, our acknowledgment goes to the almighty GOD that helped me in all the ways. Next, we would like to thank professor kifle W/mikael and Ato Shimelis Ololo for their constructive comments and suggestion in preparation of this paper and it finalization for publication because of its essentiality and a new approach. Also, we would like to thank Jimma University health Librarians who assisted me by providing necessary references & computer accesses.

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DOI: [10.19080/JCMAH.2018.08.555738](https://doi.org/10.19080/JCMAH.2018.08.555738)

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