

**DESIRE TO USE CONTRACEPTIVES AMONG SEXUALLY ACTIVE HIV POSITIVE
WOMEN IN EASTERN ZONE OF TIGRAY, ETHIOPIA, 2015**

Yemane Berhane* and Fitiwi Tinsae

Nursing Department, College of Health Science, Adigrat University, Adigrat, Ethiopia.

***Corresponding Author: Yemane Berhane**

Nursing department, College of Health science, Adigrat University, Adigrat, Ethiopia.

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ABSTRACT

Background: Human Immunodeficiency Virus is affecting majority of the population, particularly the reproductive age group; resulting in social and economic crisis. Prevention of unintended pregnancies among HIV positive women is one of the four elements of comprehensive approach to prevent mother to child transmission of HIV. **Objective:** the aim of this study was to assess the desire to use contraceptives among sexually active HIV positive women in Eastern zone of Tigray, Ethiopia. **Methods:** A cross-sectional study was conducted using structured and pre-tested questionnaire to obtain information from the respondents. Review of secondary data was also used to obtain clinical data. Data were entered, cleaned & analyzed using SPSS version 20.0. Univariate and logistic regression analysis were done to analyze desire to use and the covariates. **Results:** A total of 526 subjects were participated with a response rate of 100%. The mean age of the respondents was 34.4 (SD \pm 5.5) years. The odds of desire to use contraceptives were higher among women with education attended. Women who had HIV positive partners and discussed on family planning with their partner were more likely have desired to use the methods. **Conclusion:** The prevalence of desire to use contraceptives among HIV positive reproductive women is low. Educational status, partner's HIV/AIDS status and partner's discussion on utilization of contraceptives were factors associated with outcome variable. Policy makers and respective health institutions need to plan and consider available services to enhance future desire of contraception use among sexually active HIV-infected women to realize HIV free generation.

KEYWORDS: desire, contraceptive, HIV positive, Eastern Tigray.**INTRODUCTION**

Improving reproductive health is central to achieving the Millennium Development Goals (MDG) on improving maternal health, reducing child mortality and eradicating extreme poverty.^[1] This requires that women have access to safe and effective methods of fertility control. The promotion of family planning, so that women can avoid unwanted pregnancy, is central to the World Health Organization (WHO) work on improving maternal health and is core to achieving the MDG on this.^[2]

Despite the existence of many notable HIV/AIDS programs in Ethiopia, HIV spread and prevalence is still a major concern in the country. Unintended pregnancies have inevitable repercussion on the lives of the mother, their children, their families and they are regarded as one of the major factors perpetuating poverty and poor health in many communities worldwide. Reducing levels of maternal mortality and morbidity depends on increasing use of reproductive and maternal health services. Regardless of HIV status, The 2011 Ethiopian Demographic and Health Survey (EDHS) reported that

only 27% of married women were using modern family planning methods.^[3]

The HIV/AIDS Policy and Guidelines for Voluntary Counseling and Testing for HIV, PMTCT, and antiretroviral and opportunistic infections treatment in Ethiopia recommend that basic FP information and services should be incorporated into the services for all clients regardless of their HIV sero status. The feasibility and success of integration of FP services with HIV/AIDS care and support has been demonstrated in the country.^[4] Contraception averts HIV infection in newborns at a lower cost compared to other PMTCT interventions. Indeed the prevention of unintended pregnancies among women living with HIV is one of the World Health Organization (WHO) four elements of comprehensive approach to prevent mother to child transmission of HIV.^[5]

Little is known about the desire of contraceptives use among sexually active HIV positive women enrolled in HIV chronic care unit. The aim of this study was to determine prevalence of the desire to use and associated

factors with desire to use contraceptives among sexually active HIV positive women in eastern zone of Tigray, Ethiopia. Health professionals who work in ART units of the health centers or other clinical setting could use the result from this research as a baseline in counseling contraceptives for strengthen and scale up of HIV/AIDS service program.

METHODS

Study area

Tigray regional state is located in the northern part of Ethiopia. The region is divided into seven zones and 47 wereda (districts), of which 35 are rural and 12 are urban. Tigray regional state has one specialized referral hospital, 12 General hospitals and 222 health centers. Eastern Zone of Tigray regional state has a total population of 755,343, of whom 359,638 are men and 395,705 women (Based on the 2007 Census Central Statistical Agency of Ethiopia estimation). According to the 2003 (EFY)/2011 Health and Health Related Indicators published by FMOH, the zone has two Hospitals and 40 Health Centers. The study was conducted from March 2015 - June 2015.

Study design, population and sampling

A facility based cross-sectional study was conducted. The source population was all HIV positive women of reproductive age (15-49 years) attending ART units. HIV positive women who were too sick or unable to interview were excluded from the study. The sample size was allocated proportionally to each health institution based on number of clients on ART at each institution. To determine the sample size, a single population proportion formula with the assumptions of prevalence 50%, a confidence level of 95% (CI), and marginal error of 5% (d) a sample size was 384. Based on the data obtained from the respective health institutions the source population was 1900. So population correction was used to get the corrected finite sample size. After using the correction formula, a design effect of 1.5 and none response rate 10%, finally a total of 526 women were sampled for the study.

Data collection tool and procedure

Data were collected by interview the questioner, which consists of demographic, socio-economic characteristics, information on FP use and associated factors. It was also conducted a medical record review to confirm HAART history and to obtain clinical data. Seven health centers were selected from a total of 40 health center purposively. The total sample size was proportionally allocated to the selected health institutions based on the number of clients they have. Systematic random sampling procedure was used to select eligible participants from each health institution ART units. Every K^{th} women in the reproductive age group were interviewed during the data collection period. "K" was calculated by dividing the total expected number of women coming to the respective health institution ART units for follow up during data collection period (by

referring the client's registration book) by the total sample size. Desire to use modern family planning method is the outcome variable of the study.

Data quality assurance and management

To maintain quality of the data the supervisors and data collectors were trained on the objectives of the study, confidentiality and data collection procedures before study were commenced. The questionnaire was prepared first in English, then translated into the local language (Tigrigna), and then translated back to English by different experts to check for consistency and phrasing of difficult concepts. Validity of the questionnaire was maintained by adapting it from different relevant literatures. The questionnaire was pretested a week before the commencement of the main research. The pre-test involves 5 percent of the whole sample. Fourteen health professionals who were trained in ART/PMTCT were recruited as data collectors from outside the study institutions. The data collectors were closely followed by the supervisors throughout the data collection period. Completed questionnaire were cross checked daily for inconsistencies and the data was placed in secure place.

Data management and analysis

The data was coded, entered, edited and analyzed using SPSS version 20.0 software. Descriptive statistics was described using percentages, mean, median and standard deviation as appropriate. Binary logistic regression was used to test the significance of associations between predictor variables and the outcome variable. Odds ratio with 95% CI was calculated. All variables that have association ($P \leq 0.05$) on bivariate analysis were considered for inclusion in the multivariate analysis. Multivariate logistic regression was used to control the possible confounding effect of selected variables and to determine the independent predictors. Furthermore, multi colinearity diagnostics and interaction of variables were tested by the use of logistic regression model. Statistical significance was declared at $P < 0.05$. Finally the results were presented and interpreted accordingly.

Ethical considerations

Ethical clearance and approval were obtained from Tigray Regional Health Bureau IRB. The necessary permission to undertake the study was also obtained from specific health institution leaders and all participants were informed about the purpose, being anonymity and the right to refuse at any stage of interview. Confidentiality of the responses was assured, and informed consent was obtained prior to each interview.

RESULT

Socio demographic characteristics

A total of 526 subjects participated with a response rate of 100%. More than half, 279 (53%) of the respondents were from the urban area. The mean age of the respondents was 34.4 ± 5.5 (SD) years. Approximately, 53 percent of the participants were in the age group of

25-34 years. Majority subject participants 486 (92.4%) were from orthodox religion and 509 (96.8%) were ethnically Tigray. In terms of educational status,

289(54.9%) were illiterate. Over three-fourth, 416 (79.1%), were unemployed (house wife, daily laborer). (Table 1)

Table1: Socio-demographic characteristics of HIV positive reproductive age women attending ART units eastern Zone, Tigray, north Ethiopia, 2015 (n=526).

Variables	Frequency (N)	Percentage (%)
Age		
15-24	12	2.3
25-34	276	52.5
≥35	238	45.2
Education		
Illiterate	289	54.9
Read and write	99	18.8
Primary (1-8)	55	10.5
Secondary education(9&above)	83	15.8
Religion		
Orthodox	486	92.4
Muslim	25	4.8
Others	15	2.9
Marital status		
Married	190	36.1
Single	78	14.8
Divorced/separated	157	29.8
Widowed	101	19.2
Occupation		
House wife	364	69.2
Daily laborer	52	9.9
Government employee	19	3.6
Private employee	72	13.7
Others	19	3.6
Residence		
Urban	279	53
Rural	247	47

Desire to utilize modern contraceptives

Results of this study revealed 99% of the study subjects were ever heard at least one modern contraceptive. More than two-third of the participants, 153(67.1%) were currently using a modern contraceptive method. The most commonly used method 75 (49%) was depo Provera. IUDs were not reported by any respondent. The main reason women to choose current method were convenient to use 63(52.9%). In the study more than half of the participants 280 (53.2%) had the desire to use modern methods. The desire to use the methods was found to be highest, 165(58.9%) among women aged between 25-34 years. In the study the desire to use the modern method among married women were found to be highest 164 (58.6%) and the main reason desired to utilize the method was fear of leaving orphans 60(50.4%).

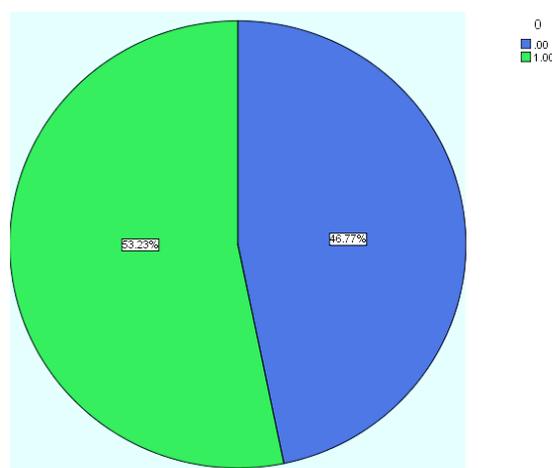


Figure1: Respondents' Desire towards modern contraceptive utilization, attending ART units, eastern Zone, Tigray, North Ethiopia, 2015.

Reproductive and clinical related factors among HIV positive women

Overall, it was found that 192(36.5%) of all participants desire to have children. Out of the women that had desire to utilize modern contraceptives, 169(60.4%) have 2-3 children. With regards to their partner's sero-status, 277(93.3%) were aware of their partner's sero-status (242(81.5%) sero-positive and 35 (11.8%) sero-negative). The rest 20(6.7%) did not know about their partner's HIV status. More than three-fourth 434(82.5%) had recent CD4 counts >250 cells/mm³ with the mean duration on ART of 3.88 years ± 1.86 (SD). More than 80% of women were in WHO clinical HIV Stage I disease and there were no women in stage 4 clinical

disease. Majority of 249(83.8%) women who had partners were discussed future use of contraceptives. Two hundred sixty (87.5%) women had disclosed their HIV status to their regular partner. five-hundred and four (95.8%) participants were currently on HAART. Almost all women on HAART, 279 (99.6%) had future desire to utilize modern methods. Four hundred and ninety two (93.5%) have an access the modern contraceptive service without fee at the respective health centers within which they attended. A considerable number of participants 153(29.1%) had concerned about side effects of method choice like irregular bleeding, infertility and vomiting. (Table 2)

Table 2: Intention for modern contraceptive utilization and Reproductive and clinical related factors among HIV positive women, health centers of eastern zone, Tigray, north Ethiopia, 2015.

Variables	Frequency(N)	Percentage (%)
Number of living children		
0-1	115	21.9
2-3	262	49.8
≥ 4	149	28.3
Partner's sero-status (N=297)		
Negative	35	11.8
Positive	242	81.5
Un known	20	6.7
Discuss with partner about contraceptive (N=297)		
Yes	249	83.8
No	48	16.2
HIV disclosure to regular partner(N=297)		
Yes	260	87.5
No	37	12.5
Side effects(N=153)		
Irregular bleeding	59	38.6
Vomiting	34	22.2
Infertility	60	39.2
Counseling service for contraceptive(526)		
Yes	466	88.6
No	60	11.4
Recent CD4 count		
0-250	92	17.5
251-500	289	54.9
>500	145	27.6
Current HAART use(526)		
Yes	504	95.8
No	22	4.2
Years since ART started		
0-2.0years	104	21.1
2.1-4yrs	201	40.7
4.1-6yrs	133	26.7
≥ 6.1 yrs	56	11.3

Factors associated with intention towards modern contraceptive utilization

In Bivariate analysis, women of rural residents, single, divorced, or widowed were less likely to report desire to use modern contraceptives. Conversely, primary and secondary or higher education attended, and those who

had HIV positive or unknown partner status, women discussed with their partner on contraceptive use and those women with high CD4 count (>500) had increased odds of desire to use contraceptives. The results from the multivariable logistic regression modeling revealed that independent predictors of desire to use contraceptives

among HIV positive women of reproductive age in health centers of eastern zone, Tigray region were educational status, marital status, partners' HIV status and women discussed with their partner on intention to utilize modern contraceptive. Therefore single, divorced/separated, or widowed women (AOR: 0.20; 95% CI: 0.58-0.25, 0.40; 95% CI: 1.29-15.07) respectively had lower odds of desire to use modern contraception. The odds of desire to use modern contraception were higher among women with primary or secondary education and higher attended (AOR: 6.08;

95% CI: 1.97-18.76), AOR: 22.89; 95% CI: 4.84-108.24 respectively. Women who had known HIV positive partner were 6.93 times likely had desire to use modern methods than women with HIV negative partner (AOR: 6.93; 95% CI: 2.60-18.44). Similarly, those women that had discussed concerning contraceptive utilization were 14.67 times more likely had desire to use modern methods (AOR: 14.67; 95% CI: 4.10-52.55). Though statistically not significant, those women with high CD4+ cell count (500) had more intention to utilize contraceptives (Table 3).

Table 3 Bivariate and multivariate analyses of variables associated with desire to use contraceptive among HIV positive women (aged 15–49) years, attending ART units, health centers of Eastern Zone, Tigray, (N=526) North Ethiopia, 2015.

Variables	Desire to use Contraceptive		COR(95% CI)	AOR (95%CI)
	Yes (53.23%)	No (46.77%)		
Educational status				
Unable to read or write	128(45.7%)	161(65.4%)	1	1
Read and write	48(17.5%)	51(20.7%)	1.18(0.75,1.87)	1.84(0.82,4.10)
Primary (1-8)	36(12.9%)	19(7.7%)	2.38(1.31,4.35)*	6.08(1.97,18.76)*
Secondary school	68(24.3%)	15(6.1%)	5.70(3.11, 10.45)*	22.89(4.84,108.24)*
Marital status				
Married	130(46.4%)	60(24.4%)	1	1
Single/never married	28(10.0%)	50(20.3%)	0.26(0.15,0.45)*	0.20(0.08,0.52)*
Divorced/separated	88(31.4%)	69(28.0%)	0.59(0.38,0.91)*	4.40(1.29,15.07)*
Widowed	34(12.1%)	67(27.2%)	0.23(0.14,0.39)*	0.34(0.11,1.07)
Residence				
Urban	183(65.4%)	96(39%)	1	1
Rural	97(34.6%)	150(61%)	0.34(0.24,0.48)*	1.06(0.52,2.2)
Partners HIV status				
Negative	10(4.9%)	25(26.9%)	1	1
Positive	179(87.7%)	63(67.7%)	7.10(3.23,15.61)*	6.93(2.60,18.44)*
Unknown	15(7.4%)	5(5.4%)	7.50(2.15,26.17)*	2.10(0.22,19.66)
Discussion with partner on contraceptive				
Yes	179(87.7%)	70(75.3%)	2.35(1.25,4.42)*	14.67(4.10,52.55)*
No	25(12.3%)	23(24.7%)	1	1
CD4 count				
0-250 cells/mm3	38(13.6%)	54(22.0%)	1	1
251-500 cells/mm3	148(52.9%)	141(57.3%)	1.49(0.93,2.40)	1.00(0.33,3.04)
>500 cells/mm3	94(33.6%)	51(20.7%)	2.62(1.53,4.48)*	0.58(0.17,1.96)

Note. * Statistical significance, COR=Cured Odds Ratio, AOR=Adjusted Odds ratio, CI=Confidence interval

DISCUSSION

The result from this study revealed that 99% of the study subjects were ever heard at least one modern contraceptive. Over all, more than two-third of the participants, 153(67.1%) were currently using a modern contraceptive methods. The most commonly used method 75 (49%) was Depo-Provera. This finding is congruent with EDHS report in Tigray region, irrespective of HIV status.^[6] Similar results were also found in a survey done in Uganda.^[7] In the study more than half of the participants 280 (53.2%) had the desire to use modern method which was more than two fold of the modern CPR in Tigray region irrespective of HIV status (21.2%).^[3] The higher desire to use modern

contraceptive among this population might be due to time deference and special attention to HIV positive women. However, is in line with the expectation of modern contraceptive utilization among HIV positive women to be higher than the general population (44%) to achieve MDGs by 2015 to avert vertical and horizontal transmission of the virus.^[4] This finding is higher than the study done in Gondar university hospital.^[8] This might be related to the fact that large numbers of women attending ART units have improved their awareness through time on contraceptive utilization due to frequent counseling services.

In contrary the current finding is lower than findings from Mbarara, Uganda (85%)^[9], this variation might be

due to high desire for children, (36.6%) in this study. This discrepancy could be explained by the difference in the study areas.

While the Ethiopian AIDS Control Program National guidelines advocate for dual family planning methods to prevent HIV/STI transmission and unintended pregnancies for HIV-positive individuals, only 39 (25.5%) women reported dual method use in this study. But this finding was higher than the study finding in Lusaka Zambia.^[10] The possible difference might be due to time variation and the presence of high awareness in this study area.

To date, published experiences and data on provision of contraception services within HIV care clinics were limited. Yet this remains one of the most promising options for providing family planning for HIV positive women and deserves particular attention. This study showed that among those currently using a contraceptive method 87.8 % of women had been counseled on family planning methods. Though the finding is higher than a study done in Mombasa, Kenya ^[11], this entail the need to integrate family planning and other reproductive health services with the general ART service and may be one of the problems to meet reproductive health care needs of these women. Service Integration offers options for preventing unintended pregnancies to HIV positive clients.

Woman's education was one of the most important factors positively associated with desire to use modern contraceptives. Primary education and above attended had desire to use modern methods more likely than those illiterates. Similar findings were reported from elsewhere in Africa.^[12-15] The higher the level of education, the more they appreciate the advantages of contraceptive use compared to those without education. Individuals with more education might have higher levels of HIV/AIDS knowledge and are less likely to have stigma towards HIV/AIDS, thus enabling them to easily change risky sexual behavior. This finding is in line with the Ethiopian family planning guide line report which declared women education increases FP use, improves communication with partner and advance women's status in the community.^[4]

Partner's HIV status was statistically associated with desire to use modern contraceptives. Those women with known HIV positive partner had more desired to use modern contraceptives. Women discussion with partner concerning future utilization of modern contraceptives had significant association. Those women who had practiced discussion had more than 14 times desire to utilize modern methods. Access to ARV is increasing in developing countries and enables HIV positive individuals to live longer and healthier lives. For instance, studies from industrialized countries suggest that ARV is associated with changes towards unsafe sex.^[15] However, results from developing nations have

been mixed.^[16,17] Conversely, increased contact with health care professionals to receive treatment may encourage positive changes in sexual behavior. Although, statistically not significant more than 30% of the women who have concern about side effects of methods had no intention to utilize contraceptives. Studies elsewhere in Africa showed that Concerns about side effects and inconveniences were by far the most prominent reasons for low utilization or discontinuation of modern contraceptives among women.^[18, 19]

HIV status disclosure to regular partner was not associated with use of contraception in either Bivariate or multivariable analyses. This is in contrast to a recent study in Uganda that showed the lack of HIV disclosure was associated with lower odds of use of modern contraceptives among HIV women enrolled in HIV clinics in Uganda.^[20] On the other hand, a significant proportion of the respondents (36.5%) reported that they wished to have a desire for children, which requires planning and support to ensure that the children are protected. HIV positive reproductive age women have a right to have children if they choose to do so. However, they should be supported to ensure that the children are born free of HIV, in addition to prevention of transmission to sexual partners.

CONCLUSIONS

Modern contraceptive method heard among the participants in this study population is high; however, modern contraceptive utilization was still low. Based on the findings of the study, it is concluded that the magnitude of desire to use modern contraceptives among HIV positive reproductive women is still low (53.2%). Educational status, partner's HIV/AIDS status and discussion on future utilization of modern contraceptives with partner were some of the main factors associated with desire to use modern contraceptives. Likelihood (chances) of being desire to use modern contraceptives by a woman increased with increase in education level, being discussed with partner about contraceptives and having known HIV positive partner.

Recommendations

We recommend Regional health bureau to consider interventional measures on women's education, Partners screening to know their HIV status and **open discussion between partner on contraceptive** use. As countries plan improvement strategies to enhance contraception uptake among HIV-infected reproductive age women, additional efforts are needed to promote modern contraceptive utilization in general and dual method use in particular. Furthermore, since the study includes only reproductive age women as study subjects, conducting a research among PLWHA using both quantitative and qualitative methods to explore gender balance and women decision making on modern contraceptive utilization is recommended.

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