



## RESEARCH ARTICLE

## Barrier Contraceptive Methods Practice and its Predictors among Human Immunodeficiency Virus (HIV) Positive Women Attending Anti Retro Viral Therapy (ART) in Hadiya Zone Public Hospitals, South Ethiopia

Markos Selamu Jifar<sup>1</sup> and Tilahun Beyene Handiso<sup>2\*</sup>

<sup>1</sup>Dembi Dolo University, College of Health science, Ethiopia

<sup>2</sup>Department of Epidemiology and Biostatistics, Wolaita Sodo University school of Public Health, Ethiopia

\*Corresponding author: Tilahun Beyene Handiso, Department of Epidemiology and Biostatistics, Wolaita Sodo University school of Public Health, Ethiopia, Tel: +251916356889



### Abstract

**Background:** Barrier contraceptive method is a strategy that prevents both unwanted pregnancy and sexually transmitted infections. Predictors for using barrier methods are not well studied in the area.

The aim of this study was to assess Barrier contraceptive method practice and its predictors among women living with human immune deficiency virus.

**Methods:** A facility based cross-sectional study was employed. Data were collected through interviewer interview using structured and semi-structured questionnaires. Simple random sampling technique from patient registration book was used to select participants. Bivariate and multi-variable logistic regression analysis was performed using SPSS version 20.0. Adjusted odds ratio with 95% CI was used to quantify degree of association.

**Results:** 39.16% of women living with human immune deficiency virus in Hadiya zone public Hospital practiced barrier contraceptive method and independent predictors are received information in the last 6 months on barrier method use (AOR: 4.05; 95% CI: 2.46, 14.83), Pre-ART (AOR: 0.11; CI: 0.07, 0.64), child desire (AOR: 0.29; 95% CI: 0.06, 0.57), supporting to use barrier contraceptive methods (AOR: 7.6; 95% CI: 2.49, 16.28).

**Conclusions:** In this study less than half participants practiced barrier contraceptive method. Child desire received information in the last 6 months on barrier method use, pre-ART drug initiation status and Supported to use barrier contraceptive methods were found to be independent predictors of Barrier contraceptive method utilization.

### Keywords

Barrier contraceptive method, Sexually transmitted infections, Public hospitals

### List of Abbreviations

ART: Anti Retroviral Therapy; ARV: Anti Retroviral Treatment; CD4: Cluster of differentiation/Cell differentiation; CSA: Central Statistical Agency; EDHS: Ethiopian Demographic and Health Survey; HAART: Highly Active Antiretroviral Therapy; HAPCO: HIV/AIDS Prevention and Control Office; HIV: Human Immune Deficiency Virus; MOH: Ministry of Health; PMTCT: Prevention of Mother to Child HIV Transmission; SPSS: Statistical Package for Social Science; STI: Sexually Transmitted Infection; UNAID: United Nations Program on HIV/AIDS; WHO: World Health Organization; PCA: Principal Component Analysis

### Introduction

The co-occurrence of HIV/AIDS and unintended pregnancy has prompted in aiming simultaneous protection against STIs and unintended pregnancy [1,2]. Some studies that have even considered the benefits of use of condom even with other contraception for people living with HIV [3,4].

Increased use of contraceptive acceptance rate in Sub-Saharan Africa with corresponding reduction in primary HIV infections and unintended pregnancies in HIV infected women has potential to decrease the propor-

tion of infants infected with HIV by 35-55% [5].

Ethiopia is one of the sub Saharan African country which is severely affected by the HIV epidemic. The dominant heterosexual transmission and the vertical virus transmission from mother to child accounts for more than 90% of HIV/AIDS infection [6].

The World Health Organization (WHO) recommends that women living with HIV to use barrier contraceptive methods for dual protection [7]. The burden of unintended pregnancy and STIs was greater among younger and economically disadvantaged men and women [8].

There are few studies done on why women living with HIV/AIDS do not use barrier contraceptive method. Thus, this study highlighted barrier contraceptive method practice and its predictors [9].

## Materials and Methods

### Study area and study period

The study was conducted in ART clinic in Hadiya Zone Public Hospitals, Southern Ethiopia. ART clinic provides free services for patients for routine testing and counseling services, comprehensive HIV/AIDS prevention, treatment and care interventions.

Facility based cross-sectional study was employed.

HIV positive reproductive aged women attend chronic HIV/AIDS care clinic with at least one visit attended before this study were included in this study. Whereas unable to communicate due to illness and pregnant women at the time of data collection were excluded from this study. The study was conducted in April 2016.

**Sample size determination:** The required sample size was calculated using a single population proportion formula as follows  $n = \frac{(Z_{\alpha/2})^2 P(1-p)}{d^2} = 381$

We use finite population proportion correction formula because source population was less than 10,000 (which is 692) and  $n/N > 5\%$

Therefore =  $N/1 + (n/N) = 246$  plus 10%

Where:  $n$  = sample required;

$Z_{\alpha/2}$  = the critical values at 95% confidence level of certainty = 1.96;

$P$  = 19.8% (Proportion of barrier contraceptive use from previous study;

$d$  = margin of error = 4%.

After adjustment for non-response 10%; the total sample size required 271.

For the second objective the required sample size was calculated by using Epi-Info software version 7.0 stat calc program. The variables associated with barrier contraceptive utilization in previous study was tak-

en and calculated [10]. The second objective calculated sample size was 252, 62 and 253 respectively, but 271 maximum sample size was taken.

### Sampling Procedure/techniques

First of all one public health hospital was selected randomly from the three public hospitals, which is Wachemo University Hospital. Computer generated simple random sampling technique using SPSS version 20.0 to select study respondents by using their ART & Pre-ART HMIS registration numbers. During the one-month study period; 263 HIV positive women were interviewed from sample frame. Respondents, who were not obtained at appointment date, were revisited the whole data collection period. The HIV positive women visit the Hospital at least once in a month. During one-month data collection period, there was possible condition to get the study participants.

### Data collection tool

Structured and semi-structured questionnaire was used to collect data which were adapted from different relevant literatures. The questionnaire was prepared in English and translated to Amharic & local language (Hadiyigna) and back retranslated to English to check its consistency. Data were collected by seven diploma nurses and two supervisor degree holder nurse. Data were collected by face to face interview using structured Amharic and local language (Hadiyigna) questionnaires. No compensation was given to participants. The data on barrier contraceptive practice was collected by oral report of females but some other independent variables like CD4 from oral report and registration book.

### Data quality assurance

To ensure data quality, data collectors and supervisor were trained by the principal investigators for two days. Pre-test was done on 5% of the sample of HIV positive women in Homacho district Hospital before the actual data collection. Supervisor and principal investigators closely followed the data collection throughout the data collection period along with the principal investigator. After data collection, each questionnaire was checked for consistency and completeness and code was given before data entry. The data were entered into Epidata version 3.1 & exported to SPSS version 20.0 for analysis.

### Data processing and analysis

Descriptive statistics was done to describe the data by using frequency, tables, percentages etc. Bivariate and multivariable analysis was performed using logistic regression on SPSS version 20.0 software in order to determine independent predictors with barrier contraceptive utilization with statistical significant level of  $p < 0.05$  and AOR with 95% CI. Independent variables with  $p$ -value of less than 0.25 were candidate

**Table 1:** Socio-demographic characteristics of participants in Hadiya Zone public Hospitals, Ethiopia, 2016 (n = 263).

Variables	Categories	Frequency N	(%)
Age group	18-29	70	26.6%
	30-39	125	47.5%
	40-49	68	25.86%
Ethnicity of mother	Hadiya	169	64.25%
	Amhara	27	10.26%
	Gurage	32	12.17%
	Kambata	16	6.1%
	Silte	19	7.2%
Religion	Protestants	101	38.4%
	Orthodox	84	32%
	Muslim	53	20.15%
	Catholic	20	7.6%
	Adventist	5	1.9%
Educational status	cannot read write	43	16.35%
	can read & write	49	18.63%
	Primary	97	36.9%
	Secondary	55	21%
	college & above	19	7.22%
Occupation	Merchant	87	33.1%
	Housewife	92	35%
	Employer	45	17.11%
	Daily laborer	22	8.4%
	Students	17	6.5%
Residence	Urban	203	77.2%
	Rural	60	22.8%
Wealth index	Poorest	57	21.7%
	Poor	49	18.6%
	Medium	55	21%
	Rich	53	20.15%
	Richest	49	18.6%

variables to multivariable logistic regression model for controlling the possible effect of confounders and finally the variables which have independent predictors with practice of barrier contraceptive. Adjusted Odds Ratios (AOR), with corresponding 95% CI were used to quantify the degrees of association between independent variables and practice of barrier contraceptive. Goodness of fit of the final model was checked using Hosmer and Lemeshow test.

Multicollinearity among independently associated variables was checked. The Bartlett test of sphericity is statistically significant at  $p < 0.05$  conducted on analysis for wealth index. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (MSA) greater than 0.5 for individual as well as the full set of items was used to check the appropriateness of the PCA [11]. Internal consistency of PCA were checked.

## Operational definition & terms

**Barrier contraceptive method practice:** In this study it refers to the HIV positive women who used condom (male/female condom) in every sexual encounter in the last six months preceding the study.

**Pregnant woman:** Refers to woman who reported she was pregnant or her husband who reported his wife pregnant

**Reproductive aged women:** In this study refers HIV positive women whose age 18-49 years attend chronic HIV/AIDS care clinic.

## Ethical Approval

Ethical clearance & official letter approved from College of Jimma University School of public health & Health Research Ethical Committee (REC). Written consent was obtained from Hospital administrators. Verbal informed consent for participation obtained from each study participant. The confidentiality of clients' information was ensured, as names or any identifiers of study participants were not be included in the data sheet. The discussions between the data collectors and the respondents were taken place privately and individually. All individuals and institutions mentioned in this study are asked and they were agreed.

## Result

### Socio-demographic characteristics of the study participants

This study tried to assess the magnitude of barrier contraceptive use among women living with HIV/AIDS in hadiya Zone public Hospitals.

From the total of 271 sample size, response rate of 263 (97%) were included in this study. Sociodemographic characteristics of study participants are described below (Table 1).

### Reasons to use barrier contraceptive methods among women living with HIV/AIDS

The use of barrier contraceptive method was 103 (39.16%). The reason reported by women to use barrier contraception is fear of other sexually transmitted infections (43%) and prevent pregnancy (20%). The reasons reported by mothers for not using were child bearing desire (11%) followed by uncomfortable to get sexual satisfaction (5%).

### Independent predictors of barrier contraceptive method practice

In this study predictors of barrier contraceptive method practice were child desire, received information in the last 6 months on barrier method use, pre-ART drug initiation status and supporting to use barrier contraceptive methods (Table 2).

**Table 2:** Independent predictors of barrier Contraceptive method practice in Hadiya zone public Hospitals, Ethiopia 2016 (n = 263).

Variable	Categories	barrier contraceptive practice		COR (95% CI)	AOR (95% CI)
		Yes, N (%)	No, N (%)		
Child desire	Yes	22 (17.6%)	56 (82.4%)	0.62 (0.23, 0.91)	<b>0.29 (0.06, 0.57)*</b>
	No	81 (32.1%)	129 (67.9%)	1.00	1
received information in the last 6 months on barrier method use	Yes	80 (49.6%)	61 (50.4%)	7.07 (4.78, 18.39)	<b>4.05 (2.46, 14.83)*</b>
	No	23 (9.5%)	124 (90.5%)	1.00	1
ART drug initiation status	Pre-ART	60 (26.2%)	141 (73.8%)	0.43 (0.37, 1.23)	<b>0.11 (0.07, 0.64)*</b>
	On ART	43 (34.3%)	44 (65.7%)	1.00	1
Supported to use barrier contraceptive methods	Yes	73 (49.1%)	55 (50.9%)	5.96 (3.42, 11.45)	<b>7.6 (2.49, 16.28)*</b>
	No	30 (13.3%)	130 (86.6%)	1.00	1

1 = reference group, \* = significantly associated factors.

## Discussion

This study assessed practice and predictors of Barrier contraceptive practice among HIV positive reproductive age women. This study pointed out that the use of barrier contraceptive method among HIV-positive women in Hadiya zone public Hospital was 39.16%. From this figure we can understand that less than half of the participants practiced barrier method with in past six month, which is important in preventing pregnancy and STIs including viral load at the same time. This finding is high when compared to study conducted in Gebretsadik Shawo Hospital which is (19.8%) [10,12]. Reasons for this variation might be due to study setting, age group & time change. But, similar with study conducted in Fitch Hospital, Oromia region and western Ethiopia [13,14].

The most common reason identified by this study to use barrier contraceptive method was to prevent STIs and avoid unwanted pregnancy.

Whereas the main reasons not to use barrier contraceptive method were desire to bear child and poor sexual satisfaction in using barrier were identified.

Child desire received information in the last 6 months on barrier method use, ART drug initiation status, Supported to use barrier contraceptive methods were independent predictors.

In this study HIV positive women who had Child desire were 71% less likely to utilized barrier contraceptive methods as compared to their counterpart (AOR: 0.29; 95% CI: 0.06, 0.57), this finding was similar with study conducted in Fitch Hospital Oromia region [13].

This study found that women who were in Pre-ART were less likely to practice barrier contraceptive methods as compared to their counterpart (AOR: 0.11; 95% CI: 0.07, 0.64). This is consistent with study done Gimbie town, western Ethiopia [14].

According this study HIV positive women who received information in the last 6 months on barrier method use four times more likely use barrier contraceptive method than their counterpart (AOR: 4.05; 95% CI: 2.46,

14.83). This finding was similar with finding from the cross sectional study done in Gebretsadik Shawo Hospital, Ethiopia [10].

Study participants who had been Supported to use barrier contraceptive methods were 7.6 times more likely to use barrier contraceptive method than those who were not supported to use (AOR: 7.6; 95% CI: 2.49, 16.28). This finding similar with study finding from Gebretsadik Shawo Hospital, Ethiopia and Uganda [10,15].

Even if study conducted on facility based primary data were used. A set of reliability and validation rules were applied. This study had a few limitations: Cause and effect relation not assured. Practicing Barrier contraceptive method may be subjected to socially desirability bias and recall bias.

## Conclusion

In this study less than half participants use barrier contraceptive method in past six months.

Child desire, received information in the last 6 months on barrier method use, ART drug initiation status and Supported to use barrier contraceptive methods were found to be independent predictors of Barrier contraceptive method utilization.

## Recommendation

It needs counseling and health education intervention by collaboration and integration of clinician and manager to increase the uptake of Barrier contraceptive methods.

## Acknowledgments

We would like to thank study participants, data collectors, and supervisor for their commitment on data collection process.

## Conflict of Interest

All authors declared as there was no conflict of interest.

## References

1. Wilson TE, Koenig LJ, Walter E, Fernandez I, Ethier K (2003) Dual contraceptive method use for pregnancy and disease prevention among HIV-infected and HIV-uninfected women: the importance of an event-level focus for promoting safer sexual behavior. *Sex Transm Dis* 30: 809-812.
2. Berer M (2006) Dual protection: more needed than practiced or understood. *Reprod Health Matters* 14: 162-170.
3. Ngure K, Heffron R, Mugo N, Irungu E, Celum C, et al. (2009) Successful increase in contraceptive uptake among Kenyan HIV-1-serodiscordant couples enrolled in an HIV-1 prevention trial. *AIDS* 23: 89-95
4. Heffron R, Were E, Celum C, Mugo N, Ngure K, et al. (2010) A prospective study of contraceptive use among African women in HIV-1 serodiscordant partnerships. *Sex Transm Dis* 37: 621-628.
5. Nattabi B, Li J, Thompson SC, Orach CG, Earnest J (2011) Family planning among people living with HIV in post-conflict Northern Uganda: A mixed methods study. *Confl Health* 5: 18.
6. Kirsten I, Sewangi J, Kunz A, Dugange F, Ziske J, et al. (2011) Adherence to combination prophylaxis for prevention of mother-to-child-transmission of HIV in Tanzania. *PLoS One* 6: 21020.
7. Munsakul W, Lolekha R, Kowadisaiburana B, Roongpisuthipong A, Jirajariyavej S, et al. (2016) Dual contraceptive method use and pregnancy intention among people living with HIV receiving HIV care at six hospitals in Thailand. *Reprod Health* 13: 8.
8. (2010) Sexually Transmitted Disease Surveillance 2009. Centers for Disease Control and Prevention.
9. Myer L, Morroni C, Mathews C, Little F (2002) Dual method use in South Africa. *Internet Fam Plann Perspect* 28: 119-121.
10. Erashi MWM, Tesso FY, Beyene TT (2015) Dual-Contraceptive Method Utilization and Associated Factors among HIV Positive Women Attending Art Clinic in Gebretsadiik Shawa Hospital, SNNPR, South West Ethiopia. *J of Women's Health Care* 4: 6.
11. Dingeta T, Oljira L, Assefa N (2012) Patterns of sexual risk behavior among undergraduate university students in Ethiopia: a cross-sectional study. *Pan Afr Med J* 12: 33.
12. Hasan A (2007) Patient satisfaction with Maternal and Child Health services among mothers attending the Maternal and Child Health Training Institute In Dhaka, Bangladesh. *MAHIDOL. satisfaction with Maternal and Child Health* 1-66.
13. Abdissa D (2015) Dual Contraceptive Utilization and Associated Factors among People Living with HIV Attending ART Clinic in Fitcha Hospital, Ethiopia. *Health, Medicine and Nursing* 20: 25-33.
14. Polisi A, Gebrehanna E, Tesfaye G, Asefa F (2014) Modern contraceptive utilization among female ART attendees in health facilities of Gimbie town, West Ethiopia. *Reprod Health* 11: 30.
15. Joseph EJ (2010) Utilization of family planning services among sexually active people living with hiv/aids in taso tororo. 11-75.